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THE DEMOGRAPHY OF A THAI VILLAGE: METHODOLOGICAL
CONSIDERATIONS AND SUBSTANTIVE CONCLUSIONS FROM FIELD
STUDY IN A CENTRAL PLAINS COMMUNITY

The Australian National University (Australia)

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THE DEMOGRAPHY OF A THAI VILLAGE:
METHODOLOGICAL CONSIDERATIONS AND SUBSTANTIVE CONCLUSIONS
FROM FIELD STUDY IN A CENTRAL PLAINS COMMUNITY

by

DONALD J. LAURO

Thesis submitted in partial fulfilment
of the requirements for the degree of
Doctor of Philosophy at the Research
School of Social Sciences, The Australian
National University, Canberra, Australia.

This dissertation is based upon original research
conducted by the author as a research scholar at
the Australian National University.

Donald J. Lauro
May, 1979

TO DIANE AND SARAH

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ABSTRACT

Demographic studies in the developing world have been largely devoid of historical or cultural content. To redress this omission, this study was undertaken as an exploration of alternative and additional methods for conducting demographic research. Such quantitative data collection instruments as a genealogical census and a life history matrix survey were used in combination with the qualitative techniques of participant-observation, informant interviews, and case studies. These various research procedures were incorporated into a field study design. The study was conducted during a one-year period in 1975-1976 in a single community located in the rice-growing area of the alluvial flood plain of Central Thailand. In this dissertation methodological considerations and substantive conclusions that have resulted from studying demographic occurrence and behaviour in a Thai village community are presented.

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NOTE ON THAI TRANSLITERATION

The system of Thai transliteration developed by the U.S. Library of Congress (United States, 1966) is used in this dissertation. However, the following modifications adopted from the Haas system have been made:

- 1) Vowel length is shown by doubling letters rather than by using a machron.
- 2) The unaspirated palatal stop is represented by c rather than ch.

CHAPTER I

INTRODUCTION

Field study differentiates this dissertation from the mainstream of demographic research. Whether following in the traditions of Malinowski's work among the Trobriand Islanders or Whyte's in the slums of Chicago, the commitment of researchers conducting field study remains the same — to spend an extended period of time studying in situ the people who live in a particular community. Because demographers have been almost exclusively concerned with studying large population aggregates, they have not considered field studies of single communities a viable research strategy. In this introduction I will explain why as a demographer field study was appropriate to my work and where its application has taken me.

I.1 Methodological Considerations

Demographic studies in the developing world have been largely devoid of historical or cultural content. While a wealth of information has been provided on patterns of contemporary demographic occurrence, little attention has been directed to what it is about particular social groups or settings that explains the prevalence of particular patterns of demographic occurrence or behaviour. Explaining observed differentials in terms of processes of modern economic development provides a perspective upon demographic behaviour that is only partially complete. In particular, such explanations often reveal more about the mechanisms of recent demographic change than about the causes underlying patterns of demographic behaviour. It is, after all, the unique historical experiences and cultural characteristics which groups of people share that greatly determines how far and fast economic development itself may proceed in a particular area.

To redress this omission, this study was originally conceived as an exploratory effort to find additional or alternative methods for conducting demographic research in developing nations. Initially, a number of data collection instruments and techniques from disciplines outside demography were considered. Subsequently several of these were selected as appropriate for a research effort that would place primary emphasis upon the historical and cultural dimensions of demographic behaviour.

In recent years anthropologists have directed some attention to the potential that genealogies have for recovering the demographic past. As Lefferts (1975: 122) has stated, the "technique of family reconstitution in historical demography ... is paralleled by a similar method in cultural anthropology, that of oral elicitation of genealogies". Thus a genealogical approach appeared a promising means to provide this study with a historical dimension. From the outset, however, it was recognized that careful tests of data reliability and completeness would have to be made before genealogical data could be confidently used to reconstruct demographic history.

While genealogical reconstruction provides one means to invest studies with a longitudinal dimension, collecting life history data retrospectively has also been used to the same end. Demographic efforts along these lines have been directed principally to the collection of fertility histories. However, in most of these undertakings memory lapse and data omission have been problematic. To overcome these difficulties the life history matrix format developed by Balan (1969) to collect residence histories of migrants was employed. The comprehensive nature of the matrix format facilitated collecting data retrospectively over a range of variables of potential demographic interest. In addition to fertility and residence histories, the matrix format was expanded to include life history patterns of occupation, morbidity, medical care, land tenure, and land use. Analyzed separately and in combination these data provide an additional means for studying the content and context of recent demographic change.

In a recent study Ratcliffe (1976: 329) has concluded that analytical bias in interpreting survey data may result when researchers lack "in-depth knowledge and understanding of the 'world known in common and taken for granted' (Schutz, 1967: 37) by members of the culture and subculture of data origin". To provide a more fully satisfactory base of understanding from which analytical interpretation of survey data could proceed, it was decided that a substantial commitment should be made to incorporating a qualitative component in the research design. This led to consideration of the uses to which participant-observation, cultural informant, and case study techniques could be put in the context of demographic study.

Only with the practical experience of employing these qualitative research tools did it become clear that substantial benefits had been derived. Quantitative research strategies were considerably enhanced by having direct

experiential knowledge of the everyday conditions in which the people being studied lived. Particular patterns which emerged during the course of conducting surveys could be pursued in greater depth by applying appropriate qualitative study techniques. A baseline of qualitative data provided the means for interpreting observed demographic occurrences and differentials in terms of the cultural characteristics which the study population shared.

Once these several research instruments and techniques had been selected as potentially useful for the purposes of demographic study, it became necessary to consider how they could be incorporated into a coherent research design. Locating the study within a single community emerged as the most logical approach. The network of genealogical linkages that could be exploited, the careful control that could be exercised over the specialized matrix survey instrument that was to be employed, and the rapport and familiarity that would be needed to conduct qualitative study were all requirements that could be met by undertaking intensive study of a single community's population.

To fully explore the usefulness of the various methods employed in the study, data was collected over a range of demographic and related variables. The genealogical approach, for example, was used in an effort to recover all events of mortality, fertility, and migration which had ever occurred in the study community. Similarly, the life history matrix was developed to elicit data within several specific areas of behaviour — medical treatment usage, family planning acceptance, and circular mobility patterns — relevant to mortality, fertility, and migration occurrences in the community. In a similarly comprehensive fashion, qualitative techniques were applied for gathering information to further illuminate both demographic history and contemporary patterns of demographic behaviour in the study area.

In the final analysis, the best test of method lies in the results which are achieved. In consequence, considerable attention is devoted in this dissertation to presenting the substantive conclusions which have resulted from employment of various research methods. Because data were collected over a range of variables, the resulting study is rather more comprehensive than most demographic research undertakings. Instead of concentrating upon one particular research problem within a large population, the study focuses upon one small community within which several aspects of demographic occurrence and behaviour were investigated. In addition to the advantages this afforded for utilizing an eclectic mix of research methods,

the intensive study of a single community's population allowed study to be directed towards the historical and cultural context within which people live. Thus while consideration of alternative and additional methods for conducting demographic research was of paramount importance in developing the research design, the substantive conclusions which are its final product may be of substantial value in and of themselves.

The substantive conclusions which emerged from use of several distinct research tools are presented in this study as a comprehensive profile of the study community's population. Thus as an illustration of the demographic experiences of one community, the findings may usefully contribute to understanding patterns of demographic occurrence and behaviour that have been documented for people sharing similar (or dissimilar) historical experiences and cultural characteristics. Additionally, this study may stimulate efforts to direct broader level inquiries to verify or refute some of the particular conclusions which have been drawn about the demography of the Central Plains Thai villagers among whom the study was conducted.

CHAPTER II

A REVIEW OF RESEARCH LITERATURE RELEVANT TO THE STUDY

In this chapter research efforts relevant to this study are briefly reviewed and critically appraised. In keeping with the basic objectives of the dissertation, attention is divided equally between the methodological approaches employed and the substantive results achieved in the various research undertakings considered. Though concentrating primarily upon research activities in Thailand, relevant studies conducted in other countries and regions are also considered. Beginning with an examination of demographic research accomplishments in Thailand, the chapter then proceeds to evaluate the cultural content of demographic research in Thailand and to summarize Thai ethnographic findings relevant to demographic studies. In the last section methodological approaches which have been successfully employed within the Thai context and elsewhere are reviewed.

II.1 Demographic Research Accomplishments in Thailand

Twenty years ago there existed only sketchy knowledge of Thailand's population and only minimal interest in demography as an important component of national development plans. The situation has changed so greatly in recent years that reviewing research accomplishments is made difficult by the many studies that have been completed. In consequence it is not the purpose of this section to comprehensively review all demographic studies conducted in Thailand. Rather, concentration is placed upon examining those research undertakings most relevant to this study. Criticisms of demographic research accomplishments in Thailand are derived much more from reflection upon what further research needs to be done than from disappointment with what has thus far been achieved.

Prior to the First National Population Seminar in 1963 there had been few attempts at formal demographic analysis or evaluation of existing data. Bourgeois-Pichat's (1960) appraisal of Thai census and vital statistics data produced the first reasonable estimates of rates of national population increase. His review of data as far back as 1911 census figures stimulated later efforts to give a more thorough accounting of historical population trends in Thailand (see Caldwell, 1967;

Thomlinson, 1971: 20-25). Identification by Caldwell (1967: 63-64) of "two nodal points in Thailand's population history. The first ... in the late nineteenth century ... (with) a rise in the rate of population growth ... The second ... followed World War II ... when mortality rates began to move downward ... decisively" neatly summarizes conclusions drawn from early sources of population data.

Following Bourgeois-Pichat's initial effort, several researchers have made follow-up assessments of the accuracy of census (e.g., Das Gupta et al., 1965; United Nations, 1966; Caldwell, 1967) and vital statistics data (e.g., Das Gupta et al., 1965; Thailand, National Statistics Office, 1969). With the exception of slight deterioration in the quality of the census from 1960 to 1970 (Wanglee and Arnold, 1975; Fulton, 1975) the trend has been toward significant improvements in reducing the percentages of census undercount and registration incompleteness. However, given the inaccuracies and inadequacies which were found (and to some extent remain) in government data sources, and given the level of general improvement made in survey administration and data analysis techniques, considerable emphasis has come to be placed upon sample surveys in Thailand as a principal means for gathering data for demographic research purposes.

The earliest effort to use the social survey in Thailand was undertaken by Zimmerman (1931) and Andrews (1935). Their questionnaires, administered to a purposively selected sample of forty villages throughout Thailand, provide a fascinating glimpse of village life as measured by such variables as land ownership, household income, and household expenditure during the Depression years. Despite this early demonstration of the success of this approach, survey research for demographic study did not get underway until the mid-1960s. The predominant objective at that time, like that of the First National Population Seminar held in 1963 (see Gille, 1964: 3-4), was to investigate and promote interest in family planning as the solution to Thailand's population problem.

Due in part to efforts made by the scientific research and international development communities to bring attention to Thailand's population problem, a significant step in making modern birth control methods available was taken by the Ministry of Public Health as early as 1962. In that year the Ministry, by way of rescinding a previous regulation, opened the way for a large-scale sterilization program to be conducted in government hospitals (Unhanand et al., 1972: 8). By the

next year it was reported that over ten thousand women were being sterilized per year (Gille, 1964: 3), the beginnings of what has been described as the most successful hospital sterilization program in the developing world (Somboonsuk and Rosenfield, 1973).

Several years' discussion of the implications that rapid population growth had for Thailand (e.g. Phasuknirant, 1960; Bangkok Bank, Ltd., 1963; Boonlong *et al.*, 1963; Raengkham, 1963) culminated in 1964 in the first active effort by researchers to determine what could practically be done to ameliorate the problem. The resulting Potharam project has been described as an "intensive action program" to foster family planning in a rural area of Thailand (Thomlinson, 1970: 1). Within a comprehensive study frame to evaluate family planning promotion efforts in the rural district of Potharam 50 miles west of Bangkok, Thailand's first Knowledge, Attitude, and Practice (KAP) survey was undertaken. Findings of this initial survey were that moderate family size ideals (3.8 children), favourable attitudes towards family planning (66 percent), and little contraceptive practice (5 percent). This led to the conclusion that the people of the district lacked "only the opportunity" for bringing about fertility decline (Hawley and Prachuabmoh, 1971: 39). The subsequent action program, which began in 1964 and continued until 1966, used existing hospital and health center facilities to provide services, principally IUD insertions, to women successfully motivated by project medical staff through home visits and village meetings. In addition, local health personnel, 'granny midwives', and word-of-mouth communication were all encouraged in the effort to promote family planning acceptance. Subsequently two additional KAP surveys were conducted to provide data for evaluating the project. After 19 months 30 percent of the eligible women had accepted family planning. The only disappointing note was the low continuation rates, falling below 50 percent after three years, attributed to heavy reliance on IUDs (Vimuktanon and Rosenfield, 1971: 125).

In the wake of the Potharam study's success came not only private and public commitments to making family planning services widely available (see Thailand, Ministry of Public Health, 1972) but also a number of studies which applied the same KAP approach to gather data in areas throughout Thailand: in a Bangkok suburb (Cowgill *et al.*, 1969); in a Southern Muslim community (Suvipakit, 1969; Suvipakit and Fawcett, 1969); in rural Northern Thailand (Jones and Rachapaetayakom, 1970); and in the rural

South (Jones and Soonthornthum, 1971). As Vimuktanon and Rosenfield (1971: 122) have noted, KAP studies other than the three conducted as part of the Potharam project have shown similar levels of desired or ideal family size in the range of 4.0 children, while levels of knowledge and practice of contraception varies from place to place.

Recent efforts to evaluate the Community Based Family Planning Services program, which has been getting wide attention both within Thailand and abroad (e.g. Business in Thailand, 1974; United Nations, 1974: 14), have adopted a research methodology similar to that employed for evaluating the Potharam pilot project. A sample drawn from the 24 districts in which the program was to operate was matched with non-program districts. Beginning in 1974 a survey of the KAP type was to be conducted in each of the next four successive years. The results of the first survey round have been tabulated and published showing levels of contraceptive knowledge (97.1 percent), ever-use (50.1 percent), and current practice (34.6 percent) (Thailand, Research and Evaluation Division, CBFPS, 1976) comparable to other recent KAP findings.

The most recent source of KAP-type data for Thailand is the Survey of Fertility in Thailand (SOFT) conducted as part of the World Fertility Survey (WFS) of 1975. For all women responding to a question on the number of children wanted "if you could choose the number" a mean response of 3.7 children was calculated (Thailand, Institute of Population Research, Chulalongkorn University and the National Statistics Office, 1977: 62-64). Fully 96 percent of women interviewed in the SOFT survey reported having knowledge of at least one efficient contraceptive method. The jump to higher levels of knowledge over those reported in earlier surveys is attributed to widespread awareness of contraception brought on by the government family planning program begun in 1970 (Thailand, IPS and NSO, 1977: 76). In addition to KAP information the SOFT data contains the most up-to-date information on fertility levels, family planning practices, and perceptions of the advantages and disadvantages of children in Thai families (see Arnold and Pejaranonda, 1977).

Interest in supporting, promoting, and documenting family planning achievements in Thailand through KAP survey research has been paralleled by an impressive amount of research devoted to more technical and practical aspects of contraceptive acceptance and use. Studies demonstrating the effectiveness, popularity, and safety of such new

contraceptive techniques as Depo Pravera injectibles (McDaniel, 1968; McDaniel and Pardthaisong, 1970), reporting on practices such as post-partum IUD insertion (Banharnsupawat and Rosenfield, 1971; Fawcett and Rosenfield, 1970), and presenting the results of innovative distribution channels such as using paramedics as birth control pill dispensers (Rosenfield, 1968; Rosenfield, 1971), have all had a direct impact on policy decisions made within the government family planning program. Though more strictly technical in nature, research into undesirable side effects or complications that may result from use of contraceptives such as the pill (Banharnsupawat, 1968a; Koetsawang et al., 1972) or IUD (Banharnsupawat, 1968b) provided needed data for developing procedures for ameliorating these difficulties. The importance of word-of-mouth communication in family planning has been well-documented in Thailand (Hawley and Prachuabmoh, 1966: 326-27; Fawcett, 1968; Rosenfield et al., 1973). In some areas research has been conducted which, as for example in following-up vasectomy patients (Burnight et al., 1974) or presenting information relevant to induced abortion in Thailand (Koetsawang, 1965; Burnight and Leoprapai, 1975), may have a future impact on policy formation in Thailand.

A corresponding result of this family planning orientation is that demographic research in Thailand has been largely concentrated in the area of fertility study. While all of the KAP studies mentioned above have devoted some effort to measuring fertility, the Longitudinal Survey of Social, Economic, and Demographic Change conducted for a national rural-urban sample provided a comprehensive source of information for the analysis of Thai fertility. Using a follow-up survey in the Potharam District to test the feasibility of the longitudinal approach, the initial survey rounds of national rural and urban samples were conducted in 1969 and 1970 respectively. Properly weighted these two surveys constitute a national cross-section of the Thai population. The second round conducted in 1972 and 1973 was designed both to allow for longitudinal analysis by re-interviewing first round respondents and to preserve the cross-sectional nature of the samples by randomly selecting additional respondents to replace those lost to the follow-up or to account for growth in the number of households (see Thailand, Institute of Population Studies, 1971; Prachuabmoh et al., 1973).

In accordance with the original purposes of the study "to evaluate the relative contribution of social and economic development ... and family planning activities ... to the reduction of the fertility rate" and "to help measure the effectiveness of the national family planning program" (Thailand, Institute of Population Studies, 1971: ii), the emphasis of a number of research reports subsequently produced on the first survey round has been upon the analysis of Thai fertility. While some studies have been concerned with the KAP aspects of the survey (Prachuabmoh *et al.*, 1972: 67-82; Prasithrathsin, 1973), others have concentrated on more thoroughly analyzing Thai fertility behaviour. In the first survey round fertility levels, particularly in rural areas and at the higher ages of women, were found to be among the highest in Asia (Knodel and Prachuabmoh, 1973: 79). While rural women were seen to have much the same fertility as they had probably had for some time, a variety of different fertility measures indicated that fertility was lower and in decline in urban areas (Knodel and Prachuabmoh, 1973: 40). While overall fertility was lowest in Bangkok-Thonburi and lower in provincial towns than in rural areas, measures of economic, social, and cultural variables exhibited significant fertility differentials only for the urban regions and not at all or very weak for the rural areas (Knodel and Prachuabmoh, 1973: 54, 77-78). As in other developing countries, contraceptive use was found to be associated with higher cumulative fertility, indicating that attempts to curtail fertility were largely an "after the fact" phenomenon (Knodel and Prachuabmoh, 1974: 446-447).

Analysis of the second round survey indicates that in the three year interim contraceptive practice has increased substantially in both rural and urban areas. As a result fertility as measured by the general marital fertility rate has fallen by about 10 percent for the entire country (Knodel and Pitaktepsombati, 1975: 19, 31). However, perhaps as a result of sampling bias incurred when selecting respondents to fill in for those lost to the second round survey (Goldstein, personal communication), while fertility in the total urban sample declined from 1970 to 1973, fertility in the Bangkok-Thonburi segment showed an increase (Knodel and Pitaktepsombati, 1975: 26). Debavalya (1976) has used data from the two rounds of the Longitudinal Survey in combination with data from other sources to make a more comprehensive statement about the prospects for fertility transition in Thailand.

The most well-documented study that fertility decline is already well underway in a largely rural region outside of Bangkok has been presented by Pardthaisong. He shows that the total fertility rate has dropped from 6.5 in 1964 to 2.8 in 1972 in the Northern Thai province of Chiang Mai (Pardthaisong, 1976: 24). Subsequent expansion and amplification upon this original study to include data up to 1975 (see Pardthaisong, 1978) has changed initial scepticism to cautious acceptance of his findings. Comparing Chiang Mai with other neighbouring provinces and with Thailand as a whole, Pardthaisong (1978: 33) concludes that "the rapid fertility decline in Chiang Mai and Lamphun was probably facilitated by the McCormick (Hospital) Family Planning Program". This program began operating in the area in 1963 and has achieved notable success since that time. The validity of Pardthaisong's conclusion is substantiated by a recent village study conducted in the area which demonstrates the readiness of women to take up family planning practice when motivated and provided with efficient services as they have been through the McCormick Hospital family planning program (Mougne, forthcoming). These findings are substantiated by the high levels of Northern Thai ever-married women shown to have ever used a contraceptive method (52 percent) and the 44 percent who continue to do so (Thailand, IPS and NSO, 1977: 79, 85).

That fertility decline is well underway throughout the country has also been recently demonstrated. SOFT/WFS data show that declines of about 20 percent in age-specific fertility rates, most notably at the older childbearing ages, have occurred in Thailand in the last ten years (Thailand, IPS and NSO, 1977: 55-57). Debavalya and Knodel have used this data in combination with data from other sources to proclaim that a "reproductive revolution" is at hand in Thailand (Knodel and Debavalya, 1978).

Interest in the fertility of Thailand has spawned research in a number of related subjects. A 'value of children' survey has been conducted in Thailand in an attempt to elicit data on how parents in different socio-economic strata perceive the social and economic costs and benefits of having and rearing children. Such factors as parents' expectations for receiving security and care in old age, the financial burden of raising children, and continuity of the family name were found to be important components of fertility decisions in Thailand (Buripakdi,

1977). Analysis of Longitudinal Survey data attempting to ascertain the relationship between female labour force participation and fertility in Thailand has shown evidence that the conflict between maternal and occupational roles result in lower fertility for salaried working women. Particularly in urban areas, work for wages has a strong negative association with fertility (Debavalya, 1977: 82-83). In a similar effort to understand the motivation for childbearing in Thailand, Arnold and Pejaranonda (1977) have analyzed SOFT/WFS data on the impact that perceived economic costs and benefits have on family size decisions. They conclude that in rural areas where female economic activities are high the social and economic structure is such that it allows prolific childbearing: "Older children and other relatives in the extended family system are usually available to take care of young children and the mother can often look after the children if no other alternative is available" (1977: 29). While perceptions of the costs of children were high for various population strata in the country, high perceived utility of children was associated with low education, low income farming families. In addition the old age security motive for having children was found to be strong in both rural and urban areas, 88 percent of respondents expecting to rely to some extent on their children for support in old age and 84 percent expecting to live with their children in old age (Arnold and Pejaranonda, 1977: 29-30).

Goldstein has devoted extensive effort to the analysis of urbanization (1968a, 1969b, 1971b, 1972), migration differentials (1971c, 1973), and religious fertility differentials (1970, 1971a). In a recent work he extends an earlier interest in analyzing the interrelationships between migration and fertility (see Goldstein, 1971a) to a comprehensive examination of the contributions that migrants make to the urbanization process in Thailand both by their own movement from rural to urban places and by the fertility contributions which migrants make to natural increase in the urban area (see Goldstein, 1977). Of primary concern is the analysis of fertility differentials between migrants and non-migrants, examining the latter both at rural places and urban places and the former in terms of both place of origin and destination. Data from three sources, the 1960 and 1970 censuses, and the Longitudinal Survey, are used to substantiate the important contribution that migrants make to urbanization by the volume of movement. For example, in Bangkok in 1970 over one-quarter of this primate city's population were reported as born elsewhere

and more than one-tenth as just having moved to Bangkok within the previous five years (1977: 678). The pattern of movement shows some selectivity for distance, age, and sex. Recently more migrants from further provinces than the nearby Central Plains and more females than in the past have been noted while selection for the 20-29 year age group has remained relatively constant (1977: 78). Return migration, circulation, and urban-rural movements were noted as important elements in "spreading urban values and patterns of behavior ... from the large metropolis back to rural places or smaller urban locations" (1977: 68). Analysis of fertility differentials by urban-rural, occupation, and educational achievement variables leads to the suggestion that a "combination of urbanization and industrialization has the greatest potential for reducing fertility" (1977: 695) and that "fostering high rates of educational enrollment of women, greater participation in the non-agricultural labor force, and greater exposure to the urban way of life provide mechanisms through which to achieve reductions in fertility levels" (1977: 696).

Urban residence regardless of migration status is associated with significantly lower fertility than rural residence. Nevertheless, the differences in fertility between migrants and non-migrants indicate that urbanization and the spread of urban values may be "important catalysts of fertility reduction; particularly since migrants to the cities seem to either bring with them or to assimilate the lower fertility levels" (1977: 699) of the city. This is supported by the low fertility of urban migrants to rural places and the high fertility of rural to rural migrants (1977: 700). In contrast to earlier studies (see Goldstein et al., 1974: 25) Goldstein's later work recognizes that the rural population is highly mobile, though not nearly so many rural as urban women were recent migrants. This suggests that movement of rural women is closely tied to marriage and the early stages of family formation. There is also considerable evidence of return migration from cities of rural-born women (1977: 704).

Goldstein's influence is detectable in the three other recent studies concerned with migration in Thailand. After a thorough review of existing literature on migration, including principally studies which analyzed 1960 census data, Prachuabmoh and Tirasawat (1974) look to the first round of the Longitudinal Survey for further analysis of migration in Thailand. Indicating the predominance of short-term moves generally, longer distant moves to Bangkok-Thonburi (1974: 39), and return migration

(1974: 44), the reasons for movement are viewed in terms of the age in the life cycle at which they occur: while economic motives predominate, to pursue education and to follow relatives as stated reasons for movement decrease with age. Marriage as the reason for migration peaks in the twenties, and economic motives become increasingly frequent as age increases (1974: 55). A section on migrant adjustment in this earlier work is pursued further by Tirasawat (1977) in a later study. Her findings are consistent with and supportive of Goldstein's conclusion that the "greater modernity of the urban migrants reflects the combined effect of selection at place of origin, differential selection by them of place of destination, and exposure to urban values and life styles at the place of destination" (Goldstein, 1977: 726).

An innovative approach is taken by Chamratrithirong (1976) in his application of Davis' (1963) multiphasic response theory to the analysis of 1970 census data. In a strictly macro-analytic approach using correlations at the provincial level between various socio-economic characteristics and patterns of migration, nuptiality, and fertility, Chamratrithirong finds support for the thesis that delayed marriage and higher levels of out-migration act as "functional equivalents" to the demographic response of reducing marital fertility in Thailand. He finds a macro-level positive correlation between modernization and out-migration indicating an innovative pattern of movement (1976: 229) and suggests that "the sheer number of out-migrants ... serves as an outlet for excess population" (1976: 218). That age of marriage and percent single are positively associated with a range of socio-economic indicators (1976: 224) supports the "relative deprivation thesis" that demographic responses are motivated more in response to increased opportunities than in reaction to increased population pressure (1976: 221). Chamratrithirong's major contribution has been this conceptualization of research objectives by the direct application of theoretical approaches other than just the demographic transition theory. In utilizing multiphasic response theory he has neither ignored transition theory nor failed to recognize that further empirical tests of his findings are needed at both the macro- and micro-levels (1976: 234).

These recent attempts to study the contributions that migration has made to demographic change in Thailand have gone a long way towards redressing an imbalance in demographic research - an almost exclusive emphasis upon family planning and fertility research - which Thailand

shared with most developing nations. However, for the most part there has not been a corresponding effort to devote research energies to the study of mortality. For example, in Thailand there has been no analysis of the rapid declines in cholera, malaria, and tuberculosis, which as the major causes of death only a few decades ago bear principal responsibility for the rapid acceleration of population increase which the nation has experienced. Largely because of reluctance to work with the recognizably deficient mortality data that does exist, "studies focusing solely on mortality (in Thailand) are rare" (Fawcett et al., 1973: 9).

A notable exception has been the work of Rungpitarangsi (1974) in producing abridged life tables for the period 1937 to 1970. Discarding the results of applying intercensal survivorship techniques to four national censuses conducted in the period primarily because census coverage did not remain sufficiently constant (1974: 19, 39), Rungpitarangsi applies the Brass technique, 'the death distribution method', to derive crude death rates from the deficient death registration and census data. Correction factors obtained by trial and error procedures were then applied to the census and registration data (1974: 71). Though the author is careful to note the possible fallibility of his results, the general conclusions shown in the adjusted abridged life tables "that mortality has decreased gradually, except between 1947 and 1960 when the decline was rapid" (1974: 68) are consistent with what we know of modern technological development and health delivery system improvements in Thailand. His findings are generally supported in a recent summary review of available demographic information for Thailand (Arnold et al., 1977: 18-19).

Except for the studies of Goldstein (1971a, 1977) and Chamratrithirong (1976) discussed earlier, the original emphasis in Thailand upon family planning and fertility research has reinforced a segmented approach to demographic study which has been generally characteristic of the discipline. This is reflected in the approaches taken by researchers attempting to provide an overview of Thai population trends and data sources (i.e. Thomlinson, 1971; Arnold et al., 1977). Despite widespread recognition that demographic behaviour is complex, research topics which transcend study of single demographic variables have seldom been proposed. For example, though it is obvious that the combined impact of maternal and infant mortality reduction and fecundity improvements have fundamentally altered the framework within which

fertility decisions are made, research has not been undertaken in these comprehensive terms. Similarly, though curative medicine and family planning services are dispensed through the same distribution system, comparative study of how well the same system performs these different functions and of how the people who are meant to be served relate and react to the services they are provided has not been pursued by demographic researchers. Though it is hypothesized that return or circulatory migrants may spread urban values and life styles to rural areas, practical proposals for studying the extent to and manner in which this occurs have not been forthcoming.

A distinct advantage of village level demographic research is that complexities of demographic behaviour such as those mentioned above may be more readily approached. In particular the cultural context within which demographic decisions are made can be mined for explanatory potential. As Caldwell (1976: 336-338; 1977: 7-9) has noted, demographers have been notably remiss in making such efforts. In the following section, ethnographic findings relevant to demographic study in Thailand are reviewed and the cultural content of demographic research in Thailand evaluated.

II.2 Ethnographic Studies and the Cultural Content of Demographic Research in Thailand

The people of Thailand exhibit a diversity of ethnic and language groups which, according to the major bibliography of population research in Thailand, "differ, sometimes dramatically, in social organization, culture, and population processes" (Fawcett *et al.*, 1973: 18). Of the several distinct ethnic groups inhabiting Thailand, the most dramatic differences are evident between the non-assimilated hill tribe minorities and the Tai¹-speaking majority. While the primitive and remote swidden farming hill tribes people, who live principally in the Northern and Northwestern mountain regions, have attracted considerable

1. The linguistic term Tai is used when referring to the general group belonging to the same language family, as distinct for example from kham muang or phaasaa speakers who are associated principally with the Northern and Central Plains regions of Thailand respectively.

anthropological research interest, the Thai government has yet to census² or confer citizenship upon them. Though some excellent and detailed studies of demographic behaviour among particular hill tribe groups have been conducted (e.g. Kunstadter, 1971; 1978; Dessaint, 1971), these have not inspired much similar effort among the more settled populations living in the rest of Thailand.

While the hill tribes remain distinct from the Tai-speaking majority, assimilation of other minority groups in Thailand has proceeded so far as to make delineation of their character or estimation of their numbers exceedingly difficult. Even prior to the southerly drift of Tai-speakers from the thirteenth century onwards, Mon people, for example, resided in the Central Plains. The Mon are considered by their major ethnographer (Foster, 1975: 36) to be so assimilated as to be practically indistinguishable from their Thai rice-farming neighbours. Similarly, assimilation of people several generations removed from China has proceeded further in Thailand than in other Southeast Asian nations.³ This militates against estimating how many more than the 311,093 enumerated in the 1970 census as having Chinese citizenship, are second and later generation Chinese-Thais who still carry significant traits and characteristics derived from their Chinese cultural heritage. Much less assimilated than the Chinese are the Thai Muslims. Like the much smaller group of Catholic Vietnamese who have lived in Thailand for generations, Thai Muslims have through religious adherence maintained a sense of ethnic distinction.

With the exception of a few Christians almost all of the remaining 95 percent of the nation's population are classified as Buddhist and Thai. Tai-speaking villagers throughout the Kingdom, however, invariably identify themselves as belonging to a particular cultural group. The four largest of these groups, the khon thai of the Central Plains, the

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2. Several attempts have, however, been made to estimate hill tribe populations on the basis of field study or survey reports (e.g. Young (1962); Thailand, Ministry of Interior, Department of Public Welfare (1966)).
 3. The city states of Hongkong and Singapore where the Chinese are the national majority are, of course, exceptional. The extremely fractious relations between Malaysian and Vietnamese majorities and resident Chinese minorities are more typical of the region and, with some exceptions during the 1930s and 1940s, in marked contrast to the Thai experience.

lao thai of the Northeast, the khon muang of the North, and the khon pak tai of the South have been estimated to comprise respectively 38 percent, 35 percent, 8 percent, and 8 percent of the national population (Kunstadter, 1967). In addition, there are some other numerically smaller groups of the Tai-speakers in Thailand, such as the Shan people in the Northwest. Each of these groups uses a distinct dialect not readily understood by speakers of other Tai dialects.

Some limited research has been done on the demography of specific cultural groups such as the Thai Moslems (e.g. Goldstein, 1970; Suvipakit and Fawcett, 1970) and the khon muang inhabitants of Northern Thailand (e.g. Jones and Rachapaetayakom, 1970; Pardthaisong, 1977). However, the findings from such studies have been restricted principally to what can be deduced from survey data without consideration of what insights could be derived from consultation of the available ethnographic literature. Similarly, neither of the two most well-known community studies of family planning attitudes and practices, the Bangkok study (Cowgill et al., 1969) and the Potharam intensive action project (Thailand, Institute of Population Studies, 1971), made use of ethnographic information available from research conducted in other Central Plains communities (e.g. Kaufman, 1960; Phillips, 1965). Nor, given their focus on single communities, did the respective researchers involved attempt more in-depth investigations so that a cultural perspective could be applied in interpreting the data they collected. In this same regard a willingness to ignore the culturally affected dimensions of demographic behaviour has characterized even the highly regarded Longitudinal Survey of the Thai population.

The many studies that have resulted from the Chulalongkorn University Institute of Population Study's massive two-round Longitudinal Survey of the Thai Population have provided much useful and needed information about patterns of contemporary demographic behaviour in Thailand (see previous section). However, the sample was drawn such that even a broad regional breakdown to roughly approximate areas inhabited by the major Tai-speaking groups could not be done. In the interest of gaining a perspective upon and some needed information about the demography of the national population, the distinct cultural and

demographic differences among various groups in Thailand were ignored.⁴

This has been the predominant mold in which even the most recent demographic studies in Thailand have been cast. Neither the recently completed value of children study (Buripakdi, 1977) nor a preliminary analysis of data from the Survey of Fertility in Thailand/World Fertility Survey (Arnold and Pejaramonda, 1977) has considered either cultural or regional differentials extant within the Thai population. Similarly the most up-to-date summary of population trends in Thailand (United Nations, ESCAP, 1976) provides few regional tabulations, presumably because of the "unusual degree of ethnic and cultural homogeneity" (United Nations, ESCAP, 1976: 46) that conventional wisdom holds to exist in the country. The more finely detailed studies produced by anthropologists present a contrasting view.

Much anthropological research in Thailand revolves around a continuing dispute whether or not a particular paradigm depicting Thai society as "loosely structured" has validity (viz., Evers, 1969; Phillips, 1969; Bunnag, 1971). In the most recent rejoinder Potter (1976) has provided ample evidence, though he does not interpret it in this way, that the controversy has been more a result of efforts to apply studies of one particular Tai-speaking group, the Central Plains Thais, as a general depiction of several other groups also resident within Thailand. Rather than attempting to develop a new paradigm to replace the old, Potter would have done better to recognize what his data clearly demonstrate - the settled corporate communities of Northern and North-eastern Thais are sufficiently different from the frontier settlements of Central Plains Thais, and also most likely from each other, to require their own explanatory models of social organization.

Not only has little effort been devoted to examining the demographic differentials that exist between distinct cultural groups in Thailand, but that such differentials may be explained by the unique ecological, historical, or social character of particular groups has not been seriously considered. For example, the higher mobility of Central Plains Thais may be related to factors other than just their proximity to the economic opportunities afforded by the Bangkok metropole.

4. In addition, four predominantly Muslim provinces in Southern Thailand were purposely excluded from the target population because of their "cultural uniqueness" (Thailand, Institute of Population Studies, 1971: 16).

The morphological features of the Plains, its history of frontier settlement, the transportation flows afforded by an extensive canal network, the constant regime of a yearly rice cycle with peak season labour demands and slack season layoffs, the difficulties of conflict resolution, and more recently the disappearance of communal labour patterns, the emergence of wage labour, and the mechanization of agriculture - most of which features contrast with the experience of peoples living in other regions - may also have relevance for explaining Central Thai mobility behaviour. While such factors as those listed above do not negate the validity of a proximity or developmental thesis about migration in the Central Plains, they do offer a basis for understanding mobility behaviour within a specific cultural context.

There already exists a great deal of scholarly work which has not been tapped for the purposes of explaining the demographic behaviour of particular cultural groups. At the broadest level, such expositions as Wittfogel's (1957) thesis linking the development of hydraulic civilization with the emergence of particular patterns of political organization needs to be re-examined in the light of what it implies for the demography of such populations. For the Central Plains Thai the growth of a feudalistic nation state was accompanied by a weakening of kinship ties. To the extent that a laterally structured, extended family system was undercut by a vertically structured system of hierarchical control, pro-natalist pressures exerted within family units may have correspondingly declined (see Lauro, 1977: 737-738). In contrast, the government's traditional concern for exercising control over manpower (Rabibhadana, 1969: 16) particularly as evidenced by the population raiding that followed victory on the battlefield (Broman, 1968: 16) goes a long way toward explaining the official pro-natalism that persisted in government circles (and thereby delayed the enactment of a national policy for population control) until 1970 (see Fawcett et al., 1969: 8-12).

Evidence from field study ethnographies offer revealing insights for explaining contemporary demographic behaviour within particular cultural groups. Demographers have totally ignored these studies. For example, though it is widely recognized that age of marriage is relatively late in Thailand this has not been linked to the widely observed prevalence of brideprice payments (Attagara, 1967: 112; Piker, 1975: 305) or the custom of male entrance into the monkhood prior to marriage (Bunnag, 1973: 36), both of which may serve as mechanism to delay the age of marriage.

Similarly, recognition that a preference for matrilocality exists (Piker, 1975: 305; Keyes, 1975: 282, 290; Bunnag, 1973: 16), that some villagers are disposed to resolve conflicts by changing their place of residence (Phillips, 1969), and that injunctions in some birth rituals for males to "roam about" and females to stay at home (R. Davis, 1973: 55), should be explored within the context of motivations for mobility behaviour. Likewise, a great deal of ethnographic detail is provided on rituals and ceremonies associated with such major life cycle events as birth and death (e.g. Hanks, 1963; Rajadhon, 1965; Wales, 1933). This information may be examined from the perspective of mining their symbolic content for possible explanations of demographic behaviour⁵ or viewed as avowed instruments of socialization or reaffirmation to encourage particular patterns of behaviour. Furthermore, changes in or disappearances of ritualized observances may mark distinct if implicit adjustment to changed demographic circumstances or conditions. Other more exotic explanations such as relating naga spirit features of Thai village architecture to sexuality (R. Davis, 1974: 59; Tambiah, 1970: 107), or relating agricultural and rainmaking rituals to fertility (Condominas, 1975: 265-271; Attagara, 1967: 122), may similarly provide some contextual depth to studies of demographic behaviour.

Some ethnographic studies provide information directly relevant to explanations of cultural differentials in demographic behaviour. For example, Singhanetra-Renard (1977) has documented the importance of circular mobility as both a traditional and contemporary pattern among Northern Thai villagers. Ethnographic descriptions that support this demographic finding are provided by Van Roy's (1971) study of tea plantation economies and Moerman's (1975) description of caravan trade in the early years of this century in Northern Thailand. Wijeyewardene's (1971) description provides evidence that there is an ecological basis for communal solidarity among Northern Thai muang villagers (cf. Kunstadter, 1966). This provides one possible explanation of why circular mobility became and continues to be important in this area. Similarly, differences in premarital sexual behaviour, as for example, the relative permissiveness of some Northern

5. Obeyesekere (1963) has analyzed the "perverse appetite" (dola duka) cravings surrounding pregnancy in Ceylon to just this end.

khon muang (Kingshill, 1965: 49) contrasted with the greater restrictiveness of the Central Plains Thai (de Young, 1963: 40; Smith et al., 1968: 124), may be examined for its psychological impact on fertility behaviour (i.e., predisposition to accept modern contraception).

In some instances, the findings of demographic research are at variance with observations made by field workers. For example, ethnographers have often remarked upon the high propensity for geographic mobility that has been characteristic of villagers throughout Thailand (de Young, 1963; Phillips, 1963; Kirsch, 1969; Wijeyewardene, 1967). In contrast, demographers concerned with analyzing contemporary patterns of migration have commented upon the stability of Thai village populations (Goldstein et al., 1974; Prachuabmoh et al., 1979).

Though many ethnographies are too broadly descriptive to provide more than speculative hints at explanations for demographic behaviour, in Thailand several anthropologists have concerned themselves directly with the population dynamics of particular ethnic groups. Most well-known perhaps is Kunstadter's (1971) study of cultural and ecological factors affecting differential demographic behaviour among Lua, Karen, and muang villagers in Northwestern Thailand. Though of more descriptive than analytical value, Riley's (1972) study of population dynamics in a Central Plains village and Lefferts' (1974) reconstruction of the demographic history of a Northeastern village establish needed guidelines for the conduct of village-level demographic research.

Fieldwork-based studies provide a contextual depth that may not only demonstrate where and why particular patterns of demographic behaviour occur but also may illuminate what policy alternatives could be formulated to affect that behaviour. In Thailand some pioneering efforts have been made to conduct studies with possible policy implications for utilization of the medical delivery system. The studies of Cunningham (1970) and Cunningham et al. (1970) in Northern Thailand and Riley and Sermsi (1974) in the Central Plains are efforts to view the range of health care alternatives at levels below those of government health administrators. Through intensive qualitative investigation of both users and practitioners these researchers have documented and begun to explain why government health facilities are under-utilized. Muecke (1976), using a similar approach, has compared traditional Northern Thai birth delivery practices with the modern hospital delivery room alternative. Her conclusions detailing both

positive and negative effects of the prevailing shift from traditional home delivery to modern medical delivery show the way towards synthesizing the best of both approaches that women may be provided safer and less stressful childbearing.

In summary, demographers have not only largely ignored the cultural diversity which exists within Thailand but they have also failed either to utilize ethnographic information that is already available or to collect ethnographic information of their own. In consequence, their studies have ignored consideration of what it is about the particular cultural conditions of the people they study that has affected their demographic behaviour. As an attempt to overcome this as well as other deficiencies in the conduct of demographic research, alternative methods for study were considered at a preliminary stage of my own work. In the following section those research procedures which most influenced the research design developed for my study are briefly reviewed.

II.3 Methodological Approaches Relevant to the Study

A commitment to study the causes and motivations which underlie patterns of demographic behaviour in rural Thailand required sacrificing statistical representation over a broad region for in-depth investigation of a smaller area. In consequence attention at a preliminary stage was given to those approaches which provided suitable alternatives to the sample surveys which demographers often employ. Concentrating study upon a single community, utilizing genealogies for reconstructing local demographic history, and collecting life histories in a specialized matrix format all had ample precedent as successful methods for demographic inquiry. The potential qualitative and quantitative richness afforded by combining these separate research methods into a single research design led to the comprehensive approach employed in my own study.

II.3.1 The Village Level Approach in Demographic Research

Perhaps as a result of traditional dependence upon government data sources, demographers have placed primary emphasis upon conducting wide regional and national level studies. Reluctance to undertake studies concentrating upon small, cohesive communities has been one result of this emphasis. However, two developments, one within the

discipline and the other without, have made the village level approach a more acceptable alternative for conducting demographic research.

Since the 1950s, studies of historical demography in European communities have attracted increasing interest. Early encouragement for historians and demographers to collaborate in the analysis of parish records for pre-revolutionary French communities (see Henry, 1953) later culminated in the establishment of formalized procedures for reconstituting families from parish registers in England (see Wrigley, 1966a). A lesson clearly drawn from the many studies which have consequently resulted is that these historically-based findings have application far beyond the delimited time/space boundaries of the parish communities studied. Henry, for example, used data from the pre-contraception experiences of the seventeenth century French village of Crulai to investigate various dimensions of natural fertility (Henry, 1958). Similarly, Wrigley's study (1966b, 1969) of three centuries of demographic history in the English community of Colyton provides evidence of interaction between mortality, age of marriage, and fertility control which illustrates the potential complexity of demographic behaviour everywhere.

Findings from historical studies were a first step in demonstrating the usefulness that could be derived from intensive, longitudinal investigations of small populations. However, before demographers could apply this lesson to the study of contemporary communities their methods and motivations received added inputs from outside the discipline. Anthropologists, who pioneered the field study approach more than fifty years ago (viz., Malinowski, 1966; Boas, 1966), have since the works of Fortes (1954) and Nag (1968) shown growing interest in demography. Interest in incorporating quantitative procedures within the field study approach (e.g. Colson, 1967; Mitchell, 1967) culminated in the early 1970 efforts of Polgar (1970) and Hackenberg (1971) to develop "demographic anthropology"⁶

6. The term "demographic anthropology" has enjoyed greater favour among British than American anthropologists.

as a subfield of the discipline.⁷ While some notable efforts have subsequently been achieved by anthropologists (e.g. Chagnon, 1968; White, 1976), a significant by-product of this development has been its impact upon research efforts in demography. By the mid-1970s several demographers had completed studies that approached research from a community study perspective.

Three studies undertaken in Javanese communities used the village level approach to uncover various dimensions of fertility and mobility behaviour. Separate studies of fertility, one concentrating upon villager economic differentials and value of children perceptions (T. Hull, 1975) and the other upon status of women differentials within the village context and their impact upon fertility (V. Hull, 1975), have been completed. Working together, these researchers found that as a result of extended residence in the field site community they were able to conduct finely detailed and highly reliable surveys. The quantitative data they collected were well complemented by the qualitative insights they were also able to attain by virtue of the field study approach. In another study, Hugo (1975) supplemented macro-level census data on migration with detailed examination of mobility flows in 14 Javanese villages. His level of inquiry led to the conclusion that circulation and commuting were important dimensions of migration behaviour that had been overlooked in studies based on broader data sets.⁸

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7. The early collaborative effort of Borrie, Firth, and Spillius (1957) to analyze population trends in Tikopia between fieldwork data from 1929 and 1952, as well as papers by Turnbull (1972) and Nag (1975) may also be noted as important. In addition, the 1972 East-West Center Population Institute conference on "Pacific Atoll Populations", resulting later (see Carroll, 1975a) in an edited volume of the same title, was also instrumental in encouraging demographic study of small populations. Macfarlane's (1977) recently completed work Reconstructing Historical Communities appears a promising methodological guide for using written records to reconstruct population histories.
 8. The same conclusion has been reached by geographers and anthropologists focusing upon patterns of circular mobility in several different contexts (see Chapman, 1978: 2-3).

Two additional studies recently undertaken in Bangladesh further demonstrate the benefits of the village level approach. Cain (1977), an economist working for the Population Council, has produced a preliminary report based on continuing research in a Bangladesh village. By investigating the economic utility of children from a village level perspective he has begun to illuminate the mechanisms through which high fertility levels may rationally persist at a micro-level while population and poverty increase at a macro-level. Khuda (1979), in an exhaustive description of work patterns and content for villagers in another Bangladesh community, provides needed baseline data from which further study of interactions between labour needs and demographic behaviour may proceed.

In all these studies the most substantial benefits of village level study were realized in terms of highly detailed and extremely reliable sets of quantitative data. Commitment to such qualitative data collection techniques as participant-observation was for the most part, as T. Hull (1975: 124) has expressed it, more philosophical than actual.

II.3.2 The Use of Genealogies for Demographic Study

As with the village level approach, interest in using genealogies for demographic study also derives from research developments in both social anthropology and historical demography. While anthropologists were again responsible for pioneering the technique, demographers have, through historical studies, demonstrated the value to be had in gaining a longitudinal perspective on population change. However, as one anthropologist has noted, while demographers have devoted considerable effort to developing the family reconstitution procedures needed for working with parish registers, they have not had a parallel concern for using the already reconstituted family histories contained in genealogies to study contemporary populations, for which written data may be lacking or inadequate (Lefferts, 1975).

Demographers have on occasion used genealogies to reconstruct select populations in historical Europe (e.g. Henry, 1956; Hollingsworth, 1957; Peller, 1965). Nevertheless, the more generally accepted opinion among demographers is that genealogies are usually too incomplete, inaccurate, or biased to serve satisfactorily as a data source for rigorous demographic analysis (McArthur, 1961: 130). However, anthropologists were not predisposed to readily accept that judgement as final.

Ever since the comforts of armchair ethnography have given way to field work, anthropologists have been interested in collecting genealogies to map the terrain of community social life. Rivers (1910) foreshadowed all subsequent work in the demographic uses of genealogical data. He explicitly recognized that their potential for synchronic analysis of marriage, migration, and family composition patterns made genealogies invaluable for social research. For the most part, however, anthropologists, though thoroughly mining the qualitative aspects of genealogical inquiry, have paid less attention to their potential for quantitative analysis.

Hackenberg (1973: 303-309) has provided a thorough review of the historical development of the genealogical method in anthropological research which it is well to summarize here. Though Rivers' original conception held that the demographic and semantic components of genealogical analysis were inseparable, bifurcation was initiated immediately by his successors. The early twentieth century study of Radcliffe-Brown (1922) emphasized the semantic uses of genealogies, while Malinowski's (1922) work was more concerned with quantification. These different emphases were passed on and reappear in the works of their respective disciples. To Warner (1937), Evans-Pritchard (1940), and Fortes (1969), the legacy of Radcliffe-Brown meant that genealogies provided the means for investigating semantic-terminological aspects of kinship as a base for developing models of social organization. In contrast, Powdermaker (1933) and Firth (1957) used genealogies to place the people studied within time/space coordinates that admitted instability and conflict as essential parts of the dynamic of social cooperation. The difference, Hackenberg notes, is that "where the semantic view of society presented an appearance of unshakeable consistency and stability, the demographic view presents the image of an uneasy reconciliation of forces about to come unstuck" (1973: 305).⁹

9. Barth has placed this methodological bifurcation in a somewhat broader perspective: "In one case, a social form, or a whole society, is seen as a morphological creature with certain requirements that need to be ascertained, in the functional tradition, the better to understand how it is put together. In the other case a social form is seen as the epiphenomenon of a number of processes, and the analysis concentrates on showing how the form is generated. Only the latter view promotes concepts that directly promote the understanding of change" (1967: 663).

Hackenberg sees complementarity between the two approaches (e.g. Goodenough, 1956; Leach, 1961) as exemplary. He is also careful to point out that in actuality the lines of study have not been so neatly drawn. For example, Fortes (1954) despite his seemingly "irrevocable commitment to categorical models based on social norms" (Hackenberg, 1973: 308) has also devoted extensive effort to conducting demographic surveys of the Ashanti. In addition, Fortes (1949) has provided "a classic exposition of the essentials of structural demography" (Hackenberg, 1973: 389) by using genealogies with residential and demographic data to analyze Ashanti norms of household formation.

Nevertheless, anthropologists have not for the most part shown much interest in demography. Hackenberg cites only two instances where anthropologists quantified genealogies for the purpose of demographic exposition (see Powdermaker, 1931; and Borrie *et al.*, 1957). In recent years, however, directly as a result of the added ease afforded by application of computer analysis to the task, this situation has greatly changed.

Based upon their own experiences, several anthropologists (e.g. Chagnon, 1974; Lefferts, 1975; and Carroll, 1975b) have encouraged that genealogical data be used for demographic analysis of field study populations. On the substantive side genealogies have been used to reconstruct the demographic histories of field site communities (e.g. Levin, 1975; Lefferts, 1974) and analyzed to statistically substantiate patterns of social and economic behaviour (e.g. Chagnon, 1968: 54-81). On the technical side considerable advances in coding procedures (see Hackenberg, 1967; Levin, 1975) and computer programs (see Levin, 1975) have made it easier to use genealogical data for demographic study.

Immediate precedent for my study was found in the work that Lefferts, a student of Hackenberg's, carried out in a Northeastern Thai village in the early 1970s. Through a genealogical approach he collected data not only "about relationships, but, concurrently, demographic data concerning births, deaths, migrations, inheritance patterns, changes in spouses, and many other items" (Lefferts, 1974: 16). By analyzing this data he documents that sustained rates of high fertility in the study community were accompanied by ebb-and-flow adjustments in village level migrant patterns. As such, Lefferts' study was the first attempt in

Thailand to quantitatively document population history in a village community.¹⁰ Unfortunately, he does not provide sufficient evidence of the reliability of the genealogical data he collected for the study.

Attempts to place Thai demography in broader historical perspective have not proceeded beyond compilation of chronological lists of data collated from past census and vital statistics records (e.g. Caldwell, 1967; Thomlinson, 1971: 20-25). Though the fruitful efforts of European historical demographers have spurred demographic interest in parish records in parts of the developing world (e.g. Smith, 1976), similar undertakings have not been possible in Thailand. Christianity was never sufficiently established in Thailand to bequeath a legacy of church registers for demographers to analyze. Despite Lefferts' work, no further attention has been given to using genealogies as an alternative data source in Thailand.

II.3.3 Retrospective Collection of Life History Data

Demographers have long recognized the superiority of longitudinal over cross-sectional approaches to research. The expense and time necessary for conducting prospective longitudinal studies has led to considerable interest in retrospective data collection instruments. Shortcomings and pitfalls of, for example, pregnancy and residence histories are however well-known and well-documented. Memory bias and data omission are principal difficulties in collecting demographic data retrospectively.

A more comprehensively approached and compactly formatted procedure for retrospective data collection has been developed by Balan *et al.* (1969). His survey instrument has shown initial promise in overcoming some of the problems usually encountered in retrospective data

10. Despite the great number of community studies completed in Thailand, very little attention has been directed towards the historical dimensions of village population change. Moerman's (1975) sketch of the seasonal travels of Chiang Rai caravan traders and Renard's (forthcoming) more finely detailed examination of continuities between past and present mobility patterns in a Chiang Mai village illustrate the variety of Northern Thai migration patterns in the past. Hanks' (1972) narrative of agrarian settlement in the Bangkok flood plain and Lefferts' (1974) demographically detailed account of community settlement in the Northeast exemplify the process of frontier expansion which has characterized much of twentieth century Thailand.

collection efforts. Using what he calls a "life history matrix", comprised of age on one axis and behaviour variables (e.g. residence, occupation, etc.) on the other, Balan found that respondent recall of their own life history events could be readily stimulated and cross-checked as part of the interview process. In a later application of the technique, Perlman (1976) further attests to its reliability and practical usefulness.

CHAPTER III

THE RESEARCH DESIGN: QUANTITATIVE AND QUALITATIVE
APPROACHES IN COMMUNITY DEMOGRAPHIC STUDY

Roads free of drive-ins and billboards are better, roads where groves and meadows and orchards and lawns come almost to the shoulder, where kids wave to you when you ride by, where people look from their porches to see who it is, where when you stop to ask directions or information the answer tends to be longer than you want rather than short, where people ask where you're from and how long you've been riding.

Pirsig, Zen and the Art of
Motorcycle Maintenance

In conducting research on a single community in the Central Plains of Thailand I chose a route different from that usually taken in demographic study. In doing so I abandoned neither the quantitative techniques nor the macro-analytic approach which are the core of the discipline. Rather, I pursued my subject in much the same manner and to much the same advantage that one would for a time in the course of a longer journey turn off a major highway to travel along neglected country roads. Methodologically, I collected qualitative as well as quantitative data and pursued particular issues from the micro-level of individuals and families as well as from the macro-level of community population aggregates. Practically, that I actually lived in the community I studied provided perspectives and insights that have affected every subsequent step of analysis and interpretation.

The method I employed for my research, that of community demographic study, may be here defined as an extended period of residence in a selected community for the purpose of conducting research in situ on the dynamics of population and the processes of demographic behaviour. It has the advantage of allowing ample opportunity for utilizing both quantitative and qualitative data collection techniques in the pursuit of specific research objectives. It provides prima facie understanding of daily life from which both data collection and analysis may more profitably proceed. It flexibly allows research to proceed at several levels from

the individual and family to larger group aggregates (e.g., landowners vs. landless) in the population.

Community demography proceeds from the field study approach commonly associated with anthropology. As Margaret Mead states, "the model of the fieldworker, as a single trained observer living for a specified period within and observing an ongoing community, whose members share a single culture, different from his own, and integrating his observations and records of the behavior of living identified individuals, is basic to anthropological methods" (1973: 246).

Living among the people being studied provides the opportunity for utilizing a range of research activities. Because there is sufficient time and concern for developing rapport between interviewer and respondent, surveys conducted within the field study situation are likely to produce data of high reliability. There is time as well for making pretests, crosschecks, and rechecks to improve the reliability of the survey instrument. Of equal importance, extended location in the community provides the opportunity for extensive use of participant-observer techniques and researcher-informant relationships to collect qualitative data. Such data may not only provide specific case studies to illustrate particular findings that emerge from quantitative analysis, but may in themselves provide the substance for generating hypotheses which may then be tested against a quantitative data base.

In community demography both quantitative and qualitative data are equally important. Systematically conducting surveys to provide data for calculating measures of the occurrence of demographic events is as important as collecting information on other aspects of behaviour, such as socialization practices or religious ceremonies, which may provide insights for explaining patterns of demographic occurrence. In the field, for example, I was as much concerned with conducting a survey to collect data on all people who had ever lived in the community as I was to gather information on the birth and death rituals which circumscribed their lives. Similarly, I invested as much effort investigating and discussing processes of demographic decision-making as I did in processing survey data which could document the extent to which particular decisions were prevalent in the community.

III.1 The Study Population and the Content of Field Study

In rural Thailand institutionalized religion provides the organizational principle and integrating focus for community identification. The community which I studied consisted of seven distinct village settlements all centered around the local Buddhist temple (wat)¹. Like other rural Thai settlements, the community I studied shares its name with the wat. An ideology of community identification remains intact under the village rubric, "The people who worship together at the wat are the people who know each other".

Adopting the community study approach does not mean abandoning the well-developed techniques of demographic analysis. The wat community provides a population base large enough to obviate some of the more stringent difficulties encountered in the demographic study of small populations (see Carroll, 1975; Feeney, 1975). For the community studied the contemporary population of 1,718 was nevertheless still small enough to warrant considering the effects of random fluctuations on particular demographic measures. Its size did however permit some flexibility in discovering the level of procedures that could be employed to more precisely analyze demographic behaviour. Thus analysis proceeded from the mere counts, ratios, and crude rates which have typified the study of very small populations to sex, age, and duration-specific measures which may be used to differentiate the effects of demographic structure from those of demographic behaviour.

At the same time that the population was large enough for using some of the refined techniques of demographic quantitative analysis, the village wat community is still a cohesive community² amenable to the qualitative aspects of the field study approach. The community was distinctly demarcated both geographically and socially from the surrounding countryside. Face to face contact among villagers, many of whom are related by blood or marriage, remains the most significant occurrence of

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1. The wat community as an areal demarcation is akin to the parishes which typified pre-industrial Europe.
 2. For contemporary Central Plains Thai villagers community cohesion is more socially than economically based. When the growing importance of the money economy culminated in the advent of wage labour at the village level, patterns of communal, cooperative, and reciprocal labour almost completely disappeared.

daily social life. Long-term residence in the community provided the research opportunity for participating in and gaining understanding of the daily routine of village life. Embedding surveys within the field study design provided additional opportunity for me, and at times my research assistants, to readily shift ground to participant-observer or informant-interview techniques when more in-depth or sensitive information was needed.

Three surveys were conducted during two interview rounds over a period of six months out of the total 13 months I lived in the field site community. Prior to undertaking these surveys an initial period of three months was spent at the field site orienting myself to village life and villagers to my presence among them. I spent my days during this time wandering around the community, visiting from house to house, joining farmers in their rice fields, explaining who I was and what I was doing there.

What was striking to me at the time about these early conversations was their repetitious similarity from person to person, house to house. I virtually developed a routine replete with jokes and anecdotes in anticipation of the questions I would be asked and the way the conversation would flow. But then, it was also true that at the time the most striking thing to villagers was my similarity to every foreigner whose picture they had ever seen.³ The superficial pleasantries I felt during this time remained genuinely characteristic of daily village social life. It took a long time and with only close friends to get beneath this surface into the deeper and more hidden realities of village existence.

I lived during this initial period with village families. I was thus able to participate in the daily routine of village life and to begin developing relationships with individual villagers who were to become what anthropologists professionally refer to as 'cultural informants'. During this time a survey to genealogically census the field study population was developed and pre-tested. In addition, supportive and substantiating data in the form of household registers,

3. Much later a friend of mine told me: "You know when you first came here you looked so much like a farang (foreigner). But now the longer you stay the more you look like a Thai".

school enrollment records, and malaria eradication maps were located and copied during this period. Also during this time I recruited eight field assistants to work with me during the ensuing months of interviewing.

The eight field assistants lived with me for the next six months in a village house which had been abandoned some 12 years before for the better opportunities of Bangkok. They included six recent university graduates in public health, a teacher-training college student on leave, and a secondary school teacher temporarily assigned to the Population Education Division of the Ministry of Education. All except one had received special training in population studies and all maintained a high level of interest and enthusiasm throughout the project. As important as it is to consider the match between interviewer and respondent (Cicourel, 1967), so it is equally important to achieve a fit among field workers engaged in a team approach to research. The six university students were classmates who had previously spent several weeks together conducting a survey in rural villages. It was a simple and gratifying experience for the rest of us to be swept up in their comraderie and esprit de corps. This was to sustain and support our efforts throughout the survey period.

Field workers who have invested considerable effort in collecting genealogies have not failed to recognize the arduous and tedious nature of the task (e.g. Chagnon, 1974: 89). The seemingly unrelieved and unending effort to collect genealogies that produced a cumulative population base of 4971 individuals who had at some time resided in the study site during the last 131 years was completed in three months of practically non-stop work. The next three months were devoted to collecting detailed life histories of 819 currently resident adult community members. For this survey the life history matrix format first developed by Balan et al. (1969) and later used by Perlman (1976) was employed. By the end of six months of interviewing our daily excursions through the community to trace branches of particular family trees or track down specific individuals had become just another part of the rhythm and routine of daily village life.

After completing this period of formal survey rounds, additional efforts were made to locate villagers whom we had missed or who were away during the life history survey.⁴ All survey data was continually being

4. The survey was purposefully scheduled to coincide with the agricultural slack period. In consequence, however, many villagers were absent while undertaking temporary employment outside the community.

rechecked during this latter phase and consequently some re-interviews were necessary.

Extensive effort was also devoted during the final stage of field research to flesh out or clarify subjects which had emerged during the previous nine months work. Among other things, in-depth interviews were conducted with various types of medical practitioners both in and around the community. Instances of family planning use, failure, and non-use were selected from interview data for case study follow-up. A case study approach was also employed to study utilization of modern health facilities for curative as well as family planning services. Prospective study of people in the process of migrating was conducted and follow-up visits were made to places of destination.

III.2 The Qualitative Approach: Participant Observation, Cultural Informants, and Case Studies in Demographic Research

Because demographers have relatively little experience with qualitative research procedures I will attempt to briefly explain the conditions in which I lived during field study and the strategies, both research and rapport-related, that I adopted. I made a conscious effort to live at a standard that was close to the village norm and to maintain a life style compatible with villager expectations. Initially, this was facilitated by living with village families and simply observing the patterns of everyday life. Fortuitously, Thai villagers hold the posture of indifference (choei choei) in high esteem, and thus I could readily and unobtrusively observe many facets of life in which at that stage I would have been reluctant to participate. In a later phase, more confident of my position and of what was expected in given situations, I began to be more involved in the events around me. My clumsy efforts at harvesting rice, netting fish, and paddling boats, though some source of initial amusement, were an integral part of my acceptance in the village.

Reciprocity is highly valued in Thai social relationships and was easily applied for the purpose of field study. Early on in my stay I accepted an offer from the school principal to teach English a few days a week in the local school. This gave me an established position of respect in the village and made me quickly known in many households. Similarly, I used my camera to good advantage, taking photos of villagers

for identification purposes and dispensing duplicates for their own enjoyment. There was in fact some minor demand for my services in portrait photography.⁵ Naturally I wanted to more directly repay those who were kind enough to house and feed me and this was most easily accomplished by occasionally bringing gifts from the market town or Bangkok.

I frequently attended religious ceremonies and celebrations at the wat and comfortably fell into a pattern of morning visits with the circle of men who regularly congregated about the abbot. During the Buddhist Lenten season I found the Buddhist holyday gatherings of the more devout elderly a most opportune occasion for checking out difficulties and discrepancies in the genealogies we had collected and for pursuing other more general topics of historical interest. In the late afternoons I regularly visited the village coffee shops where people gathered after returning from trips to nearby market towns or the day's work in the fields. In both formal (e.g. checking villager's recall of individuals whose names we found on school enrollment listings stretching back nearly a half-century) and informal ways (e.g. introducing topics for general discussion such as why people join particular migration streams) these group settings provided a valuable opportunity for collecting additional data.

For the most part, though, and especially in the early months, I wandered incessantly throughout the seven villages that comprised the community study site. Relying upon a combination of villager hospitality and curiosity I secured invitations into many of their homes. In this way I became known and came to know personally a great number of villagers. These visits led to the development of a network of personal and family contacts throughout the community upon whom I was to call again and again to increase my knowledge about various aspects of village life or villager behaviour.

Once the burden of conducting surveys was fully upon me and my research assistants I was forced to curtail this more enjoyable pace of research in favour of more structured activities. During the six

5. As a large photograph was a desirable centerpiece for funeral ceremonies I in this way came to know who among the village elderlies was likely to be the next to pass on. I was thus able to closely observe villager behaviour and attitudes towards and to participate in the rituals surrounding death.

months of interviewing, the participant-observer and informant-interview components of my research necessarily waned. The all-encompassing effort of gathering the quantitative data base for my study was to some extent ameliorated by the diaries that I and my research assistants kept throughout this period. The formal survey interviews often led to lengthy discussions of tangentially related issues which would be recorded for later, more thorough investigation. In this way we got on to a number of issues, such as the importance of slavery in the early settlement of the village, the impact of Chinese coolie migrants at an early period of village formation, and villager perceptions of changes in population structure and behaviour, which would not otherwise have emerged from the quantitative data by itself.

During the last four months of field study, ably assisted by one of my survey interviewers, I was able to devote more effort again to the qualitative approach. However, by this time inquiry was much more finely focused. It was during this time that I made particular use of informants and was most conscientious about collecting case studies to illustrate certain patterns of behaviour.

In more general terms qualitative research offers the advantage of allowing crucial areas of investigation to emerge from the research experience rather than to be imposed by a predetermined and precoded questionnaire. The content, structure, and coding of the three surveys conducted were the result of many informal conversations with villagers. At a later stage I could take a proposed questionnaire to key informants and ask them directly which things would and would not work. To some extent the process also worked in reverse - patterns of behaviour that emerged from the formal conduct of surveys would lead to case study investigation. For example, the continued reliance upon traditional medical practitioners (moo booraan) and the preference for injection doctors (moo chiit yaa) over government health service workers led me to conduct several interviews with each of the three types of local practitioners and some of their actual or prospective patients.

Many of the most crucial analytical considerations emerged from qualitative spade work in the field. The tremendous impact of modern transportation, technology, and communications upon village life and demographic behaviour became clearer with the case histories that villagers were able to provide.

In conducting the field study I made one critical, though fortunately not fatal error, that it is well in conclusion to mention here. The ease of my entry as a single individual and a foreigner into their community during the first three months of study engendered a complacency about the need to assuage villager suspicion once research took on more formalized dimensions. To be sure, I had followed all the proper channels of governmental bureaucracy to secure the necessary papers for conducting research and had presented these to all the proper local and regional government officials. However, I misjudged the impact that 'anti-communist' radio propaganda had had on villagers. During Thailand's brief experiment with democracy (1975-1976) university students' attempts to educate and mobilize villagers against governmental inefficiency and corruption had been quite effectively countered by radio messages warning villagers to beware of strangers coming to their villages asking questions. These people, villagers were told, were undoubtedly communists attempting to subvert villagers, overthrow the monarchy, and destroy Buddhism. As a single individual, and a foreigner, I was too bizarre a figure to ever be considered a threat of the kind against which the radio had warned. However, my first attempts using my eight Thai field assistants to map the community in preparation for beginning the surveys was, for several villagers, an ominous portent. In consequence, a hasty retreat was called for, as we devoted further efforts to overcome villager suspicion.⁶

III.3 The Quantitative Approach: Conducting Surveys as a Part of Field Study

Surveys are completely compatible with the field study approach. Familiarity, proximity, and rapport with respondents provide ample opportunity for developing, pretesting, collecting, rechecking, cross-checking, and ultimately evaluating the validity of response to the survey instrument. Additionally, both in terms of style and timing, surveys may be conducted in a manner amenable to the routine of village life. In contrast, sample surveys, because of the logistics involved

6. From my experience in villages prior to this time and from conversations with researchers who have more recently conducted field work in Thailand, it appears that my period of field work coincided with an unusual and particularly tense period in Thai politics.

in conducting interviews over wide areas, are frequently impositions upon the people studied. In Thailand, government-sanctioned orders will often be given to ensure that all respondents remain at home on a given day so that interviews may be conducted. There is obviously an issue of sensitivity to respondents here to which these broadly based studies do not or are not able to give sufficient consideration.

During the course of field work I experimented with a variety of survey formats and interview schedules. From this testing situation I found the survey to be an extremely valuable tool if one sticks to the facts and stays around long enough to make sure that the facts are correct.

In conducting research within the village community field site, I attempted to develop survey instruments compatible with the interests, expectations, and routines of the villagers. For the most part I utilized survey formats that facilitated conversation between interviewer and respondent. This was done in conscious contrast to the stilted formality of one-way information flows that result from following questionnaire schedules. Questionnaires were found in practice to be so alien to the exchange of information which governs normal interaction as to be detrimental to the validity of the response. As an alternative approach, interviewers were, when possible, provided with structured guidelines for leading villagers through conversations touching upon the various informational items with which the survey was concerned. The process involves placing a great burden upon the interviewers to lead respondents from point to related point in gathering the data, and upon the field editor to be sure that the various points had been covered. The principal benefit derived is that respondents are more likely to respond with candor and interest to interviews that more closely approximate everyday interactive situations than to those that do not.

Where I found surveys to be weakest was in the attempt to elicit attitudes and opinions concerning behaviour, particularly where questions were concerned with causal motivations underlying specific patterns of demographic behaviour. It is not that such questions should never be asked, for certainly they can provide some insight, but that within the coding confines of the survey format they lost much of their substance. As Barton and Lazarfield (1955: 341) have stated the most insightful information will sometimes be contained in the scribbles on

the margin of an interview form. Even these however cannot encapsulate the hesitations and silences, the groping efforts of respondents to articulate an answer to a question which they have never previously been asked, or perhaps even considered.

The questions asked on many surveys, especially those concerned with eliciting people's attitudes or expectations, or those which try to get people to say "why" they behave in particular ways, are often questions of a kind which people would never ask of each other. In Thailand, while villagers would frequently inquire after factual information (how much something has cost or where a person has been or is going) they would be much less likely to inquire about a person's motivations (why did you buy that or why did you go there?). There is an inherent respect for privacy about individual intention in village Thailand, such that one need not respond to direct questions with specific answers. For example, the question, "What did you go there for?" will be answered with either the gloss of "I went for business" (pay thura) or "I went for pleasure" (pay thiao). Either of these responses covers such a wide range of activities as to mean just about anything. As answers, however, they satisfy the questioner, who will almost never follow-up with a further inquiry of "What kind of business?" or "What kind of pleasure?".

With few exceptions, I avoided incorporating into surveys questions of a type or concerning subjects which villagers would not think of or be able to ask of each other. In all Thai social interaction there is a premium upon avoidance of conflict mechanisms. Consequently, conversations are rarely opinionated or evocative of the opinions of others. Villagers generally refused to speculate about the motivations of others, invariably stating that people must "follow their own hearts" (dam cai). As "the most important aspect of a social relationship (among Thai villagers) is the psychic comfort and welfare of the persons involved, not the truth or validity of the matter discussed" (Phillips, 1967: 354), questions concerning their own motivations or directly eliciting opinions are likely to be met with well-gauged responses of what it is presumed the questioner would like to hear.

In developing survey instruments for my study I frequently observed my field assistants in interview situations and sometimes monitored such interviews by using a cassette tape recorder. Listening to recordings proved a most valuable technique for evaluating question-

naire schedules and interviewer performance. Even the best interviewers, including at times myself, as the tapes unhesitatingly revealed, will lead respondents faced with questions to which they have no ready response. As a result of extensive testing and evaluating survey instruments I decided to limit my formal surveys to the demographic and demographically related facts of the situation. The nearly four months I spent prior to beginning the actual surveys enabled me to develop appropriately compatible survey instruments to collect this data.

Because I have been so critical of attitudinal and motivational aspects of demographic survey research it might be well at this point to consider alternative research possibilities. Projective testing techniques as developed in psychological research are held to be valuable for much the same reason that participant-observer research is - the subject though he knows he is being studied does not know exactly what it is that the research is after and, therefore, cannot tailor his responses (Janes, 1961: 447). Further, such techniques may enable respondents to indicate preferences or values which they would not be able to verbally articulate in response to direct questions. Though many researchers have called for increased use of projective testing techniques in demographic research (e.g. Rosario, 1971: 21; Fawcett, 1970: 90-104), especially as demography has become increasingly concerned with motivational research, few have actually put them into practice. As I discovered, there is good reason for this. Developing projective tests entails a considerable amount of time and a substantial understanding of the culture in which they are to be used. Nevertheless, so valuable would be the results that this is an approach to research which should be given greater attention.

In my study I developed three surveys to get out the demographic and demographically-related facts of village life: a genealogical census of the population, a material possessions survey of village households, and a life history survey of adult residents. In the following sections I explain each of these surveys in detail.

III.3.1 A Genealogical Census

As part of field study in the Thai Central Plains, a genealogical survey was conducted during the three month period just after the harvest. Every day the interviewers would set out in four teams of two persons each, one male, one female, to record the salient features of

villagers' blood and marriage ties. The purpose was not strictly to trace kin relationships but rather to use the kinship structure to elicit demographic facts about the village populations. By focusing attention upon family relationships the interviewers stimulated and ordered the memories of villagers about the demographic events which had occurred in their community and which have surrounded their lives.

Anthropological research experience indicated (see Barnes, 1967) and preliminary field testing confirmed that the most efficacious way to assure full recall in genealogical reconstruction was by first eliciting descendant relatives and then proceeding vertically upward to trace ascending relationships. At all generational levels, however, the genealogical census interview was pushed as far as possible horizontally to provide a broad base for cross-checking. Survey teams would subsequently conduct additional interviews with affinal and cognatic relatives still living in the community who had been previously placed along the horizontal branches of a family tree. In this way the teams proceeded from house to house in the community in accordance with who was related to whom. Thus, they became very knowledgeable about the kin ties of specific village families, and were, through the flow of information gathered in many separate interviews, constantly able to cross-check and recheck with data they had already collected.

For recording demographic and related information a census card (Figure III.1) was filled in for each individual who was recovered during the course of genealogically surveying the population. These record cards contain space for the following information: name; place of birth, residence, and death (including house number if in the village community); dates of birth, in-migration, out-migration, and death; occupation, and cause of death. In the middle of the card, just above the name, is space for recording a unique genealogically-linked identification number for each individual. This identification number was derived in accordance with a coding system developed by Hackenberg (1967). Details on this and other technical aspects of coding data collected during the genealogical census are provided in Appendix A.

During the interview the two team members shared responsibility for leading respondents through the various branches of their family trees, eliciting accurate information on individuals thereby encountered, and recording this information. While one team member completed a census

Figure III.1. Genealogical Census Card

<input type="checkbox"/>	Sex <input type="checkbox"/> <input type="checkbox"/>	Occupation
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Year of Birth <input type="checkbox"/> <input type="checkbox"/>	Usual Place of Residence
<input type="checkbox"/> <input type="checkbox"/>	Animal Year	<input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/>	House No.
		<input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/>	Year of Out-Migration
		<input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/>	
Name			
<input type="checkbox"/> <input type="checkbox"/>	Place of Birth	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Individual's I.D. Number
<input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/>	House No. (if in Baan Tang Chang)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	I.D. Number of Spouse
<input type="checkbox"/> <input type="checkbox"/>	No. of Siblings <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Year of Death
	 <input type="checkbox"/> <input type="checkbox"/>	Cause of Death
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Year of In-Migration <input type="checkbox"/> <input type="checkbox"/>	Place of Death
		<input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/>	House No.

card for each individual, the other sketched in his location on a large family tree chart (see Figure III.2).

Sibling rank, parity order, number of children, and marital ties were implicitly indicated in the family tree drawings. In addition, individual names and information about current residence, sex, foetal wastage, deaths, and fictive kin ties were also included on the trees. Many respondents were quick to understand this visible arrangement of genealogical relationships on family trees and would point out where individuals should be placed in relation to others who had already been recorded.

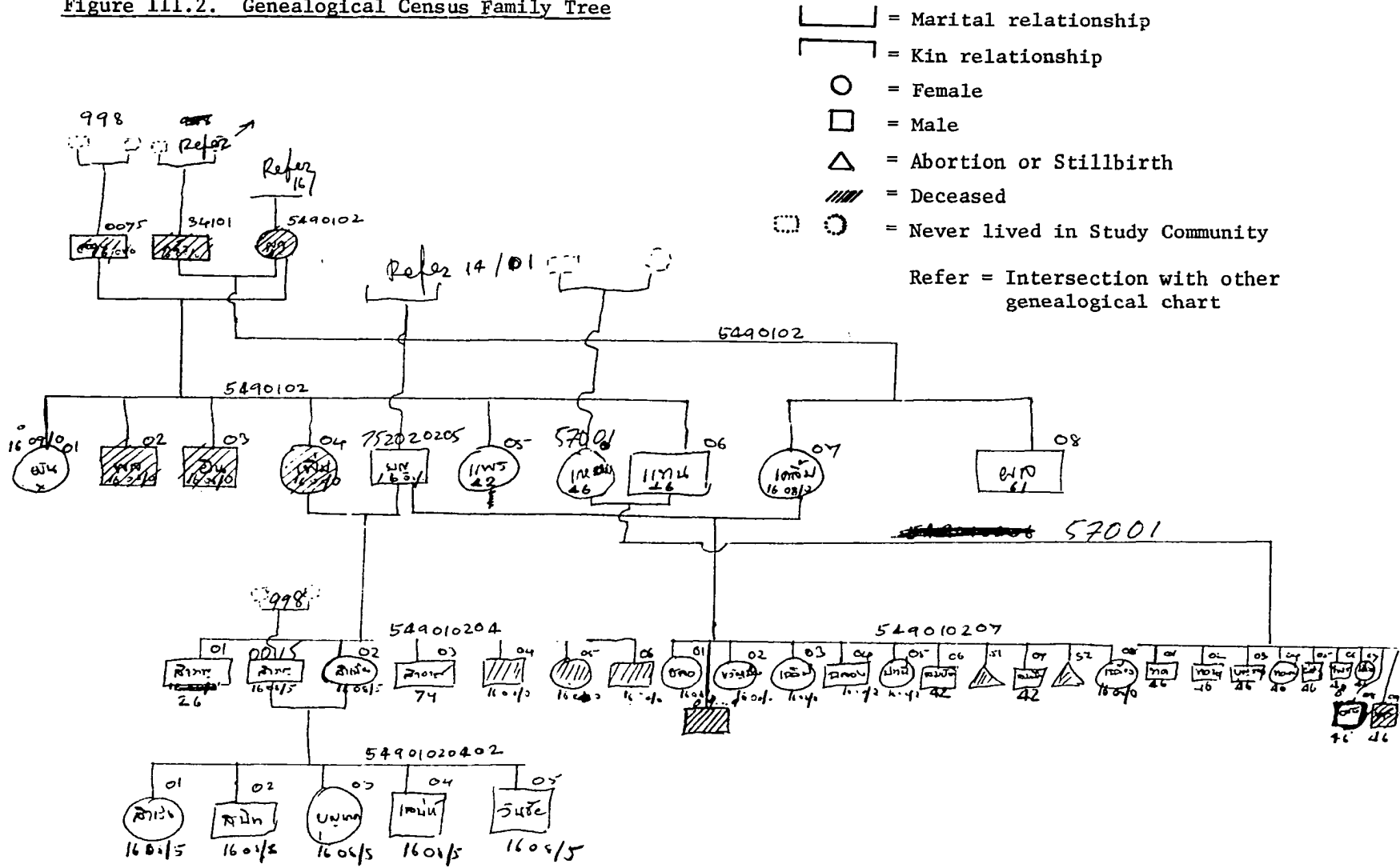
At the conclusion of each household interview the record cards were collected into a deck from right to left in ascending order. Thus the oldest family members, usually long since deceased, were always at the top of the deck, the youngest at the bottom. The family tree sheets were double-folded and wrapped around the genealogical census card decks. The package, marked with village and household numbers and the interview team's initials, was tightly secured with a rubber band. Corrections resultant from subsequently rechecking the data for internal consistency or cross-checking with intersecting data from other survey teams could quickly be made by referring to the family tree as an index to the specific location of cards in the deck.

Before departing for the next day's interview, the team would check all information on the cards with that on the family trees. The verified information would then be coded into the appropriate boxes on the record card. A neater version of the family tree would also be drawn at this time. The package would then be rewrapped and submitted to the field editor⁷ who would review and recheck all the data. Any discrepancies or errors would be corrected; if necessary the package would be returned to the survey team for re-interviewing.

The actual interviews were often characterized by informality and enjoyment. People like to talk about what they know and what is important in their lives. The interviewers' task was simply to bring

7. I was both the field editor and a member of one of the survey teams. At the time I had only been able to secure the services of seven research assistants. By the second survey round when we collected life history data an eighth research assistant had been added, but one of the original seven had been lost to graduate study at a Bangkok university.

Figure III.2. Genealogical Census Family Tree



some order to the vast amount of knowledge that villagers had about their kinsmen. Data flowed from respondent to interviewer as a joint effort to reconstruct a family history.

A census card was filled in for each addition to the family tree, and questioning would move along its branches to the next relative. In large measure the ease of the interview was due to the fact that all the interviewers lived in the community and had taken the time to know villagers outside of the interview setting. Within a very short time after beginning the survey the interview teams were spiritedly engaged in discovering the intricacies of what one eminent anthropologist has aptly termed the underlying web-of-kinship relations.

Because the survey was done during a slack period in the demands for agricultural labour, it was usual to find most villagers at home. Often several household members would together participate in a single interview. When the genealogy reached to individuals of a certain generation or particular social distance, different family members would be called upon to provide the appropriate information. Even though some household interviews proceeded through as many as six generations and lasted as long as four hours, the burden of tedious attention to detail fell largely upon the interviewers and not upon the respondents. Several individuals, sometimes in as many as ten households scattered throughout the community, expanded upon single family trees. Departures of individual family members for permanent residence outside the community or major intersections with what had been collected by other interview teams marked the points at which tracing branches of specific families were curtailed. There was in consequence constant interaction and communication among the different survey teams. In the process data were constantly being reviewed and double counts and inconsistencies were eliminated.

Within two-and-a-half months, all village households had been interviewed. An additional three weeks was spent generally reviewing and rechecking the data in preparation for final coding. Several households were re-interviewed at this time to rectify data discrepancies or incompleteness. At this point the Hackenberg identification numbers were assigned. Each of the 5,062 records recorded in the census⁸ now had a

8. These included 91 census cards that were filled in for recovered instances of miscarriage and stillbirth. The remaining 4971 cards contained information on individuals who had ever lived in the community.

unique identification number which specified locus within a particular kin group. Coded data were then transferred from the record cards to IBM code sheets and sent to Bangkok for card punching.

III.3.2 Household Material Possessions Survey

At the conclusion of the genealogical census interview a series of questions was asked at each household about whether and for how long the household members had owned various goods. This household material possessions survey (Figure III.3) required only a few additional minutes of the respondents' time and yielded a wealth of data about the economic circumstances of village households. Though such information would have been extremely interesting, no data was collected on income or indebtedness. Pre-survey tests had indicated that such questions were often not reliably answered and created suspicion among many villagers. They were consequently left off the survey.

The household material possessions survey had two primary purposes:

- 1) To provide a data base for differentiating village households by relative economic status.
- 2) To provide an indication of the extent and timing of modernizing influences in the community.

For this particular community the importance of one additional factor, ethnicity, became increasingly evident during the course of field study. Though almost all villagers consider themselves to be Thai first and foremost, several families maintain strong identification with their Chinese ethnic heritage. Consequently, because the villagers themselves consider this to be a significant differentiating factor, information was collected from informants to identify those families with Chinese blood. This information was added to the household material possession survey data set.

II.3.3 The Life History Matrix Survey

Building upon the genealogical census, the second survey round gathered much more detailed information about the life experiences of currently resident adult villagers. The primary objective was to collect a quantitative data base within which hypotheses about demographic behaviour which had emerged during the qualitative component of field

Figure III.3. Household Material Possessions Survey

Village

/
House No.

1. How many of the following animals does this household own:

Buffalo	<input type="checkbox"/>
Cows	<input type="checkbox"/>
Pigs	<input type="checkbox"/>
Ducks and Chickens	<input type="checkbox"/>
2. How many rai of land inside the community does this household own?
3. How many rai of land outside the community does this household own?
4. How many fish ponds valued at more than 1000B does this household own?
5. How many of the following things has this household possessed? When was the earliest year of possession?

<u>Item</u>	<u>Number</u>	<u>Earliest Year</u>		
a. Radio	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Gas or fuel stove	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Bicycle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Inside toilet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Small boat motor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Large boat motor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Motorcycle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Small tractor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Medium tractor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Large tractor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Television	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Car or truck	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

study could be rigorously tested. The data collection instrument was an adaptation of the life history matrix format originally developed by Balan *et al.* (1969) and also later used by Perlman (1976).

The life history matrix survey is a concisely formatted instrument for ordering, stimulating and cross-checking individuals' recall of their own life cycle events. The survey is conducted by actually filling in the appropriate cells of an age-by-variable matrix with the information forthcoming from a particular respondent. Within the restrictions imposed by the researcher's selection of behavioural categories, the matrix format is used to elicit data about events occurring at each age of the respondent's life.

After proceeding through appropriate levels of coding, categorization and computerization, the life history matrix survey results in a quantitative data base encapsulating individual life experiences as related to age, chronological time, duration of occurrence, and other life cycle events. Using a more standard format of the question-answer type to collect a similarly extensive data base would be entirely too cumbersome and tediously time-consuming for both researcher and respondent. Furthermore, with a questionnaire schedule, it would be extremely difficult to attain as high a level of accuracy in terms of the timing or completeness of reported events as can be provided by careful application of the matrix survey technique.

Both Balan and Perlman applied the matrix format to the study of mobility behaviour. Though their efforts attest to the strength of the instrument for eliciting a wealth of reliable data, neither was able to push the problems of analytical conceptualization and computerization very far toward solution.⁹ In consequence, their efforts to use the life history survey have been largely ignored and the matrix format has not been widely applied elsewhere. However, its use in several in-progress research projects being conducted at the East-West Center Population Institute indicate that reluctance to use this survey technique is being overcome.

9. Perlman, however, in the few pages of her book that she devotes to matrix data analysis (1976: 70-72) introduces the concept of conducting 'analysis upon strings' which has been a major focus on my development of analytical approaches. For details of the coding, computing, and analytical procedures I used in working with life history matrix survey data see Lauro (1979).

I utilized the matrix format to collect fertility, mobility, morbidity, occupation, land ownership, and land use histories for all adult residents of the community field site population. In total this resulted in 819 completed life history interviews. Though varying greatly with age and experience of respondents, the average time per interview was about thirty-five minutes. The survey was conducted over a three month period with the life history matrix proving to be an effective and efficient data collection instrument.

The life history matrix, while providing the interviewer with a tight structure for eliciting and recording information, did not thereby impose structure unduly or distractingly upon the interview situation. Such was the free narrative flow that characterized most of our interviews that the polite submissiveness, indifference, and boredom of respondents typically encountered (and ignored) in most survey situations was largely absent.

Instead of a questionnaire, a 46-by-16 grid printed on large (36" by 24") sheets of paper served as the interview schedule (see Figure III.4). At the top of each of 16 columns a behavioural category heading was placed. These columns were correspondingly numbered from 01 to 16. On the left hand vertical axis, corresponding to each row of the grid, single year age increments from one to 45 were printed. At the topmost part of the sheet space was provided for recording an individual's name, identification number, sex, birth year, and residence place. A second grid sheet, identical except that the vertical listing of ages was from 46 to 95, was attached to the first when older villagers were interviewed.

On the matrix all events are linked to the age at which they occur. Details relating to these events were recorded directly on the matrix sheet in the appropriate cell of the grid, that is, in the matrix position corresponding to the age of occurrence and the appropriate behaviour category. Interviewers quickly developed shorthand methods for rapidly noting the details of most frequently reported events. As only changes within behaviour categories needed to be recorded, most of the matrix cells for a given individual's interview would remain empty. The recorded data was subsequently coded, checked, and transferred to IBM code sheets in preparation for card punching.

My use of the life history matrix format demonstrates that the instrument may be applied with satisfactory results to studies concerned

Figure III.4. Interview Instrument for Life History Matrix Survey

NAME :		VILLAGE										IDENTIFICATION NUMBER		BIRTH YEAR			
HOUSE NO.																	
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
A G E	M F F A E A P R R M L I T I A T I L N A L Y N L I I T N Y G	PLACE M O H B I I S L T I O T R Y Y	OCCUPATION HISTORY			LAND TENURE				AGRICULT. TECHNIQUES			DOUBLE CROPPING		HEALTH HISTORY		
	HISTORY		First	Sec- ond	Third	Owned (No. of rai)	Reason for change of tenure	Rented in (No.of rai)	Rented out (No.of rai)	Method of plough- ing	Method of harvest	Method of thresh- ing	No.of rai	Techniques	Serious Illness	Medical Service	
01																	
02																	
03																	
04																	
05																	
..																	
..																	
41																	
42																	
43																	
44																	
45																	

with more than just mobility behaviour. I adapted the matrix format to include collecting data on various aspects related to villagers' mortality and fertility as well as mobility behaviour. The time-dimensional depth of the data base and the encoded linkages between various life events provide a basis for examining the temporal and conditional circumstances within which decisions are made. Accordingly, in this dissertation I will use data from the life history survey to analyze specific components of three distinct areas of demographic behaviour that affect village mortality, mobility and fertility levels. Within a comparative framework I will respectively analyze villagers use of traditional vs. modern health services, their streams of circular and especially seasonal migration as against non-movement, and their acceptance, continued use or non-acceptance of modern birth control practices.

Using the life history survey matrix placed a great burden upon the interviewers and the field editor.¹⁰ Interviewers needed to be carefully trained in the techniques of using the survey instrument. Most importantly they were trained to place reported events within the appropriate cell of the matrix and to heuristically utilize the juxtaposition of placement in the matrix as the means to elicit and substantiate the placement of other events. Because skill in using the matrix position of reported events to key the recall of other life history events is so important to the success of the survey, some examples of how this works in practice are presented in the following.

A woman reporting that her first child was born when she was twenty-three would have this information recorded in the 23 (age) by 01 (family) matrix cell. The interviewer would then use this occurrence to provide connections with other events occurring at or around the same time. For example, the occurrence of this first birth may be used to elicit residential, occupational, or land ownership information (e.g. when this child was born where were you living? etc.). In general, the location of any one event on the matrix may be used to key recall horizontally across the matrix.

10. As with the genealogical census I functioned as field editor for the life history survey. In addition, I either conducted or observed about one-fourth of all the interviews we did. I thus had intimate and first-hand knowledge of my interviewers' capabilities, interviewing techniques, and villager responsiveness to the survey instrument.

Similarly, fixing a particular event in time provides an anchor for vertical placement, i.e. within the time dimension, on the matrix. For example, the age of mother at first birth (readily deduced, if not known, from the age of the eldest child if still living) provides the means to substantiate the age of other related events, such as marriage (e.g. how long were you married before having your first child?). In turn, this can key vertical and horizontal placement of other life history events (e.g. how many years were you living in the community before you were married? For how many years after your marriage did you continue in this occupation?).

Elicited events within a particular category (column) also provide a time series for checking the completeness of response. The interviewer can, for example, direct questions towards time gaps in the occurrence of events where experience would indicate some regularity of patterns (e.g. birth spacing gaps leading to additional questions concerning family planning use, infant mortality, foetal wastage, and marital stability). Similarly, a completed series of behaviour category events can be used as the basis for summary review questions (e.g. in addition to having lived in these three places in your lifetime, have you ever lived anywhere else?).

Obviously, a carefully constructed training program was necessary to give interviewers the opportunity to practice and develop the appropriate skills for conducting the survey. Role playing and practice interviews under actual field conditions were used extensively to provide interviewers with experience in working with the life history matrix. In addition to fulfilling this purpose, training sessions also provided a practical basis upon which to develop the codes for detailing particular events.

Interviewers had to learn, and the only way to learn was through experience, how both to go with and to direct the flow of an interview. Though no hard and fast rules could be developed to cover all interview situations, interviewing experience led to the recognition that key events within the lives of particular types of individuals could be exploited for maximum coverage. For example, for males military experiences were often the key to mobility and occupation histories. Similarly, the prevalent practice of entering the monkhood for a short period in early adulthood often keyed the timing of males' first marriage. For

females, childbearing was most often the key to other events in the life history.

Both experiencing and observing these training sessions led to the development of the idea of using checklist questions to conclude interviews. These provided interviewers with an efficient means for reviewing the information collected during an interview and checking on its completeness. For example, at the end of the interview a woman's fertility history was reviewed. The order and timing of each child's birth as already reported were reviewed, and questions were directed towards uncovering any additional fertility-related events. Particular attention was paid to unusual gaps between successive children's births. A similar procedure was followed for recapitulating and checking the completeness of mobility histories.

The small scale of this operation greatly facilitated the administrative control I exercised over it. That I and my interviewers were already acquainted with most villagers, and by this time had begun to know some villagers quite well, made it much easier to collect and check life history information. Whether or not the matrix format could be as successfully and easily applied for large scale random surveys where respondents do not have prior familiarity with interviewers is a question in need of further consideration.

That the interviewers were integrally involved during the training period in developing and refining the survey instrument was an important part of its successful application. Through their welcomed contributions they became both cognizant of and committed to the survey's value as a tool to elicit information by relating one bit of data to the next. At the level of analytical conceptualization the lesson that had to be learned was the same - the value of the matrix survey is in the facility it provides for relating life cycle events one to the other.

III.4 Conclusion

In concluding this chapter it is desirable to consider the question of how representative this study of a single community is of the broader area of which it is a part. In terms of statistical representation the answer must obviously be negative - the study community may not in any way be construed as a sample drawn randomly from a pool of all Thai

communities.¹¹ Rather the field site community was purposively selected to provide an illustrative example of the dynamics of population patterns and demographic behaviour operative at the village level. As Hackenberg (1971) succinctly states the case:

"While the effects of population change may be clearly visible at (the) macrolevel (of large cities, regions, or nations), both theory and common sense dictate that the efficient causes of population change are operative of the microlevel of family and community".

Prior to beginning my one year field study, a preliminary period of three months was spent in villages throughout the North and across the Central Plains. Within this comparative base the selected field site was seen as typical of many other Thai village settlements - commitment to rice farming, generational depth in the area, access to traditional lines of transport and their recent improvement, long-standing subjugation to government authority, a predominant adherence to Buddhism. Particular settlements, however, like individuals and individual families are unique and generalization must always be exercised with caution.

The advantage of the community study approach lies in the depth of inquiry thereby facilitated. To an extent, the exercise can be viewed as an attempt to generate hypotheses which can then be tested within sample frames of larger bases. Findings which have emerged from this study may be tested statistically over broader areas. For example, the demonstration that land ownership and landlessness provide a fine cutting edge for differentiating patterns of demographic behaviour within village society should be usefully applied to survey research efforts elsewhere (cf. Knodel and Prachuabmoh, 1973: 81). What this study has done, however, which quantitative study of itself cannot do, is to provide a qualitative data base within which the explanations which underlie observed statistical relationships may be determined. Demonstrations that these same patterns exist elsewhere must necessarily derive explanations for their existence from the kind of qualitative insight that field study provides.

11. To have scientifically selected a sample community would not only have been contrary to my purpose but would, as Hugo points out in defense of his purposive selection of field study communities in Java, have produced a sampling fraction of such small magnitude (in my case of the order of .0001) as to "cast (but) a spurious air of respectability over the findings" (1975: 372).

CHAPTER IV

VILLAGE LIFE IN THE CENTRAL PLAINS OF THAILAND:
THE FIELD STUDY COMMUNITY OF BAAN TANG CHANG

"We are the people of the rice fields".
- a Thai villager

"In the fields there is rice; in the
waters fish". - King Ramkamphaeng

Like many Central Thai communities, Baan Tang Chang¹ is centered upon a klong (canal) from which both the local Buddhist wat and the community itself have taken their names. Klong Tang Chang, the Path-of-the-Elephant Canal, is a natural waterway which according to local tradition was named after the manner of its formation. For uncounted years in the past, elephants, wild buffaloes, and other animals of the forest lands to the west would annually migrate in search of water across the plains with each beginning and end of the monsoon. Over the years this annual trek etched a deepening depression in the otherwise flat plain. In time the track became a waterway that connected established riverine settlements to the east with hinterland forests to the west. Eventually, families in search of unclaimed land settled along this track, shored up its banks, and deepened its channel to provide drainage for the previously uncultivated swamp lands which they claimed for rice farming. As more settlers came and the population increased, household clusters became villages and the villagers by joining together to construct and support a wat signified their emergence as a community.

IV.1 The Study Community in National Perspective

The Kingdom of Thailand occupies about 200,000 square miles on the subcontinent of Southeast Asia in an area between 5 and 21 degrees north of the equator and between 97 and 106 degrees east longitude. The

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1. In the interests of confidentiality and anonymity Baan Tang Chang was chosen as a pseudonym for the community field site. Though the name is fictitious the primal facts related here are true.

country shares borders with Burma, Malaysia, Cambodia, and Laos (see Map IV.1).

Within Thailand four environmentally, ethnically, and economically distinct regions may be designated: the South, the Northeast, the mountainous North, and the alluvial flood plain of Central Thailand. As Thailand, like all of South and Southeastern Asia, is dominated by the monsoon, it is worth quoting at length what this often noted climatological phenomenon entails:

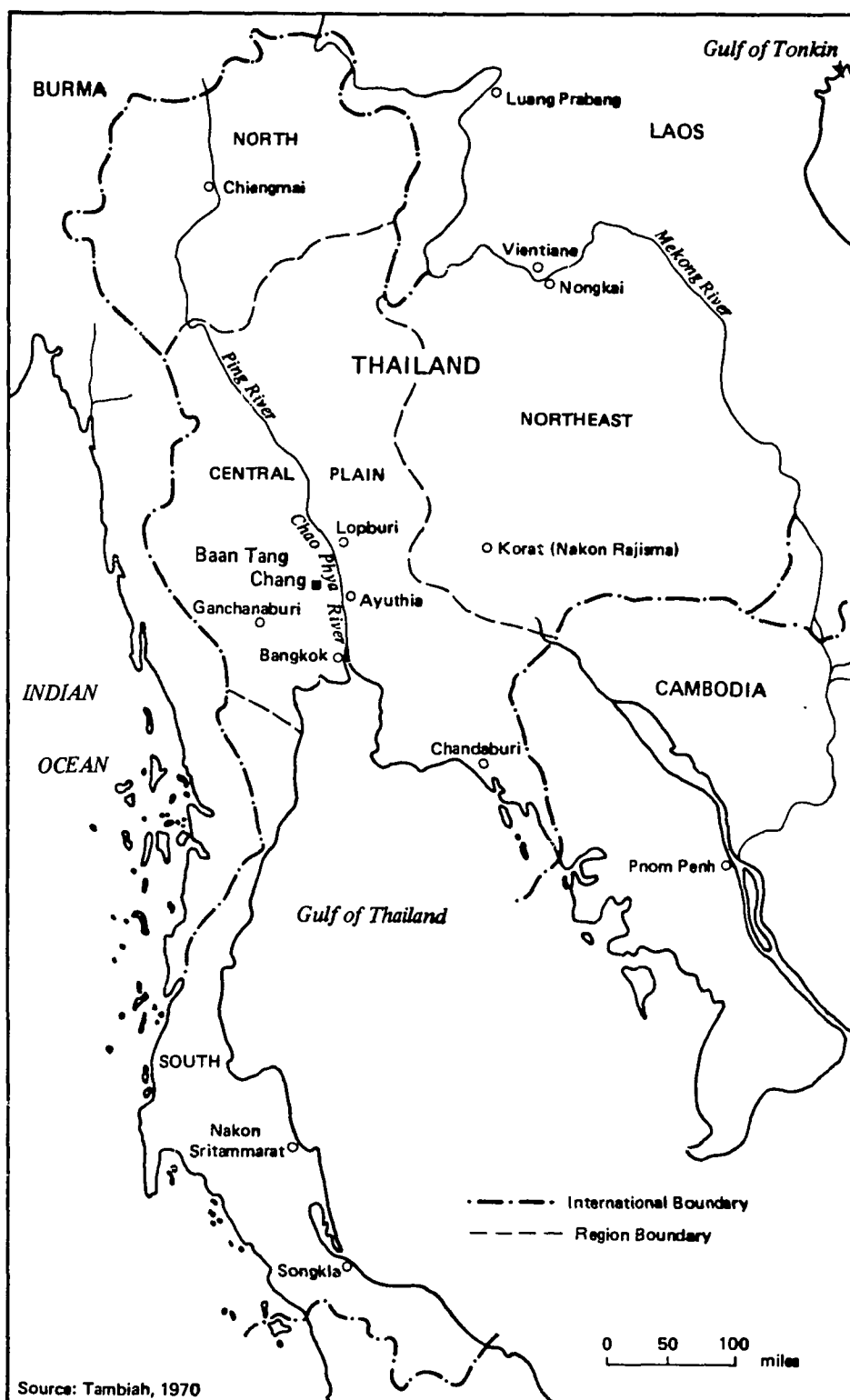
Monsoon winds are essentially seasonal winds blowing from one direction part of the year and from the opposite direction the remainder of the year. On this very simplified basis, four seasons can be recognized: (1) north-east monsoon from December through February - the "dry season"; (2) transitional hot weather and highly variable winds of March, April, May; (3) south-west monsoon from May to October - the "rainy season"; (4) retreating monsoon period of October and November.
(Pendleton, 1962: 113)

Southern Thailand is the region of heaviest rainfall and least devoted to rice as either a subsistent or export crop. Tin mining, rubber planting, and coastal fishing occupy important positions in the region's economy. Though nearly all of the 3.9 percent of the national population who are Islamic live within the four provinces at the southernmost tip of this region, the majority of Southern Thais (khon pak tai) are Buddhists. They speak a distinctly melodic variant of the Tai language. Though the Thai-Moslem populations in the area have received some attention from anthropologists and demographers (e.g. Fraser, 1960; Suvipakit and Fawcett, 1969), the Southern region in general and the Southern Thai Buddhists in particular have been largely neglected by social science researchers (Amyot, 1965: 160).

To the northeast, the Korat plateau, generally thought to be the most desiccated region of the country, has an average annual rainfall of only 40 to 60 inches compared to over 80 inches in the South.² The North-east region is home to some 15 million Lao-Thais. Periodic droughts combined with the lack of both indigenously-developed small scale and

2. Compared to rainfall averages of around 50 inches in both the North and Central Plains regions, the Northeast is not quite so arid as generally assumed (Barton, 1962: 116).

Map IV.1. Thailand



government-sponsored large scale irrigation works have continually exacerbated the region's economic difficulties.³ In recent years, however, there has been considerable supplementation of the glutinous rice raised for domestic consumption with non-glutinous varieties valued for export. By the mid-1960s the region was contributing about 20 percent of the nation's total rice exports. Apart from this, however, the region produces no one major cash crop, though cotton, kenaf, maize, and tobacco, as well as cattle raising, have become increasingly important (Ingram, 1971: 239-240).

The mountainous terrain of the North stands in sharp contrast to the dry plateau of the Northeast. In general, the cooler climes of the forested highlands are occupied by swidden cultivating hill tribe people such as the Karen, Meo, Lisu, and Yao, while the narrow valley lowlands are settled by wet rice cultivating Tai-speaking khon muang.⁴ Because of the relatively short rainy season of four months, Northern Thais primarily cultivate only the glutinous variety of rice. The environmental constraints of farming rice in narrow valleys has resulted in much more intensive agricultural practices than elsewhere in Thailand. Communally cooperative construction and management of small scale water control systems is a notable feature of Northern Thai communities (Wijeyewardene, 1971). In consequence, the social commitment to the structural organization of the village community is, like the average yields of rice per acre, considerably greater in the North than elsewhere in Thailand.⁵ In addition, Northern Thai villages typically have much more cash cropping, of such crops as tobacco, beans, vegetables, ground nuts, and cotton, and much more local industry, with such activities as broom-making, silk-weaving, or woodcarving, than found elsewhere in Thailand.

-
3. Since the 1950s some government-funded improvements have been made with the construction of several hundred irrigation tanks and localized canal networks. However, the final resolution of the area's water shortage difficulties rests with a proposed multi-national Mekong River Development Project. The contemporary political situation in Southeast Asia has indefinitely postponed this.
 4. The northwesternmost province of Mae Hong Son is also inhabited by a number of another Tai-speaking subgroup, the Thai Yai, and by the non-Tai Karen, both of which groups are also located in Burma.
 5. The 1968-1969 crop year figures provided by the National Statistical Office of the Kingdom of Thailand show the following regional rice production differentials in kilograms per rai (6.25 rai = 1 hectare): Northern - 371.4; Southern - 297.8; Central - 295.0; Northeast - 225.4.

In contrast, the Central Thai are dispersed in communities across the flat alluvial plain of the Chao Phya river basin and devoted almost exclusively to a rice monoculture. The Central Plain, though having conditions less than ideal for paddy cultivation,⁶ is the heartland of rice cash cropping in one of the world's highest rice export nations. Annual flooding in the basin - to a depth of over ten feet during a five month period from June to November - in combination with modern flood control management, well-adapted rice varieties, and the well-developed skill of the rice farming population compensates for these less-than-ideal conditions.

A network of man-made canals, many owing their construction to the corvee labour system practiced in previous centuries, interlaces the area between the north-south flow of the Chao Phya river and its tributaries.⁷ The original function of this traditional canal system was first to provide transport avenues for the King's soldiers, administrators, and tax collectors and secondarily to more evenly distribute both the annual flood waters and the Thai population across the Central Plains. Under the aegis of the progressive reigns of King Mongkut and his son King Chulalongkorn in the last half of the nineteenth and early decades of the twentieth century and the resultant expansion of opportunities for export trade, both the Thai population and the area in rice production rapidly increased (Ingram, 1971: 43-46). Towards the end of this period preliminary efforts were made to develop a system of water control for the entire plain. Though the regime of one good crop year out of every three, resulting from yearly rainfall and flood variations, prevailed until the 1950s, since that time substantial improvements have been made in flood control management. The most well-known project, the Greater Chao Phya Irrigation Development Project, completed in the mid-1970s, has, in addition to providing greater flood control over 1.4 million acres, opened wide expanses of land to the

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6. Average annual rainfall is only two-thirds of that considered necessary for paddy farming at this latitude (Fisher, 1964: 495). In addition, the soil has in places been found to be too acidic for high yield productivity (Small, 1972: 61).
 7. Wales (1934: 230) states that "In all several thousand kilometers of canals were dug since (the 16th century), and tens of thousands of acres of unproductive land were made fit for cultivation".

possibility of rice double-cropping.⁸ The selected field site community of Baan Tang Chang lies within the area thus benefited.

IV.2 In Search of a Field Site

It was from the level of general familiarity with Thailand outlined in the previous section that I undertook from January to March of 1975 to find a field site community in which to conduct a community based demographic study. During the course of a previous two year stay in Bangkok I had made several field trips, most often with survey research teams, to villages and towns. These trips were usually in the Central Plains or the North, but occasionally in the Northeast and South. Upon my return in 1975 I attempted to renew acquaintances I had made during earlier trips, and to solicit some additional up-country contacts from Bangkok colleagues.

In the ensuing three months I stayed for periods varying from two days to a week in 12 village communities in North and Central Thailand. Within this limited time I was unable to extend my search into the North-east or South. That I did not actually locate the specific field site community during this time did not mitigate the value that this preliminary investigation had for the study I was ultimately to conduct.

From my experiences during this preliminary field investigation I was able to list five criteria as desirable parameters for a still-to-be-found field site:

- 1) Central Thai had to be the principal dialect of the selected community. Though I was already fluent in Central Thai, I found this did not take me very far in communicating in the Northern Thai, kham muang or thai yai (Shan) dialects. Northern villagers could usually understand what I said for all radio programs as well as schools are by law conducted in Central Thai. Often, however, I had to rely on translators to understand their replies. As I was interested in collecting in-depth qualitative data as well as conducting quantitative surveys, it became apparent that I should select

8. A recently completed Ph.D. thesis (Small, 1972), preparatory to evaluating the Greater Chao Phya Project, discusses and reviews the history of water control in the Central Plains.

a Central Plains village where I had experienced no or few communication difficulties. As one Central Thai villager told me: "It is good for us to talk like this without (need of) a translator. If everything we said had to be translated we would be too tired or lazy to speak everything to each other".

- 2) An evolving interest in placing my study within an historical content of the changes that had occurred in village life meant that I wanted a community that had neither been overwhelmed by the forces of modernization nor such a remote backwater that it had experienced very little change.⁹
- 3) Given this historical interest I began to develop procedures for collecting demographic data within a genealogical framework. Consequently I required a community that had for several generations been located in the same area. Genealogical reconstruction would thereby be facilitated by the surviving and still-resident community members who would be able to report on their ancestors. Additionally, the likelihood that extensive intermarriage had occurred would strengthen and expand the basis for genealogical recall.
- 4) Because I wanted the findings from this research to be applicable beyond the boundaries of the single community I was to study, I needed a field site that was truly typical of Central Thai village communities. Thus, as several researchers have pointed out, the typical Thai village finds its identification in communally focusing upon the Buddhist wat (Mulder,

9. In my preliminary field trip I had come across one community of each type. The first was located within an hour of Bangkok. Several modern factories had been constructed within a short distance so that most villagers walked from their community to work one of three eight-hour work-shifts a day. A road was being built to give them direct access to a modern highway. Though the community afforded a fascinating opportunity for studying village transformation under the pressures of rapid modernization, it did not have sufficient stability from which to reconstruct the past. A few weeks earlier I had stayed in a very isolated and remote community of the second type when by chance I connected with a group of hunters on a weekend jaunt. This small village was at the northernmost edge of the Central Plains at the end of a twenty-five mile road that was totally impassable during the five-month rainy season. Though intriguing precisely because it was such an enclave away from development, this community was too atypical of most Central Plains communities to be chosen as the primary field site for my study.

1969: 19-20; Kaufman, 1960: 113; Amyot, 1974: 17).

Similarly, a typical Central Plains settlement is committed to the cultivation of rice above all other occupations, and in consequence usually has access to the system of waterways which crisscrosses the plain. It is also increasingly common to find both a local school and health clinic in rural Thai communities.

- 5) Because written records would greatly help my study, it was also desirable to find a field site that had reasonably accurate household registration and other records.

Within three weeks of my return to Thailand in November of 1975 I found what was an ideal community for my purposes. Initially intending to stay for only two or three days, I stayed on for two weeks. After satisfying a compulsive need to check out a few more field site possibilities, I decided to look no further. I thus committed myself to the study of Central Plains community called Baan Tang Chang. After securing the proper documents in Bangkok for introducing myself to local government officials, I returned again to Baan Tang Chang on December 15, 1975. For the next year this was to be my home.

IV.3 A Brief Description of Baan Tang Chang

Baan Tang Chang is a community of seven villages located on the alluvial flood plain of Central Thailand (see Map IV.2). In the field study year the community consisted of 1,718 permanent residents living in 301 households. A number of these were however seasonal migrants who spent only part of the year living in the village. Population pyramids for the 1960 and 1970 village population demonstrate by their wide-based triangular shape that, in common with most of rural Thailand (see Figure IV.1) as well as the rest of the developing world, this community has experienced a sustained rate of population increase.

Each village is represented by a locally elected headman (phuu yai baan). Within each government district (tambon) - the seven villages in the study area comprised parts of two separate tambon - the government appoints one of the headmen to serve as the community headman (kammaan). As lower level government officials, the headmen receive a small stipend and attend monthly meetings at regional (amphoe) headquarters. They function principally as liasons between villagers and the higher levels

Map IV.2.

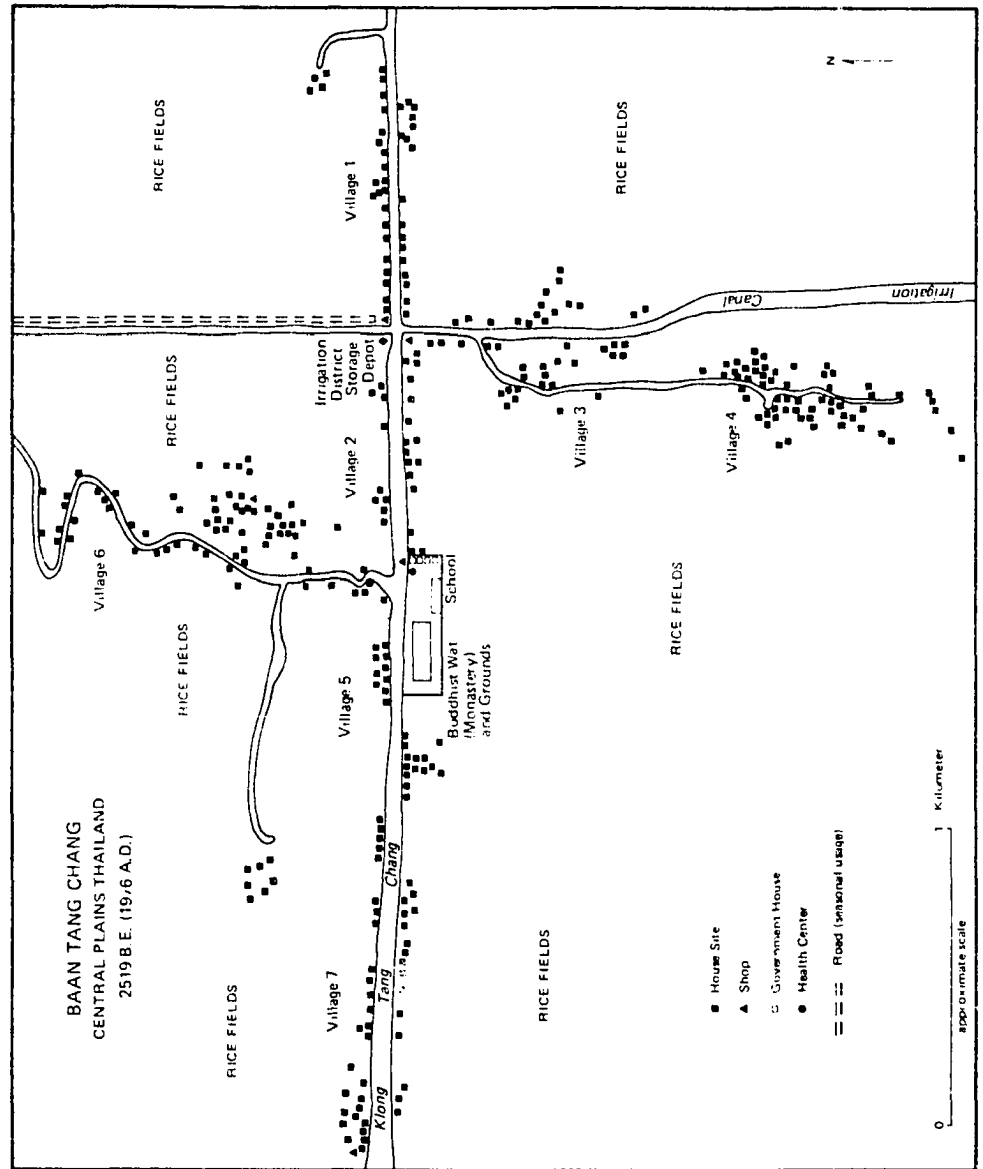
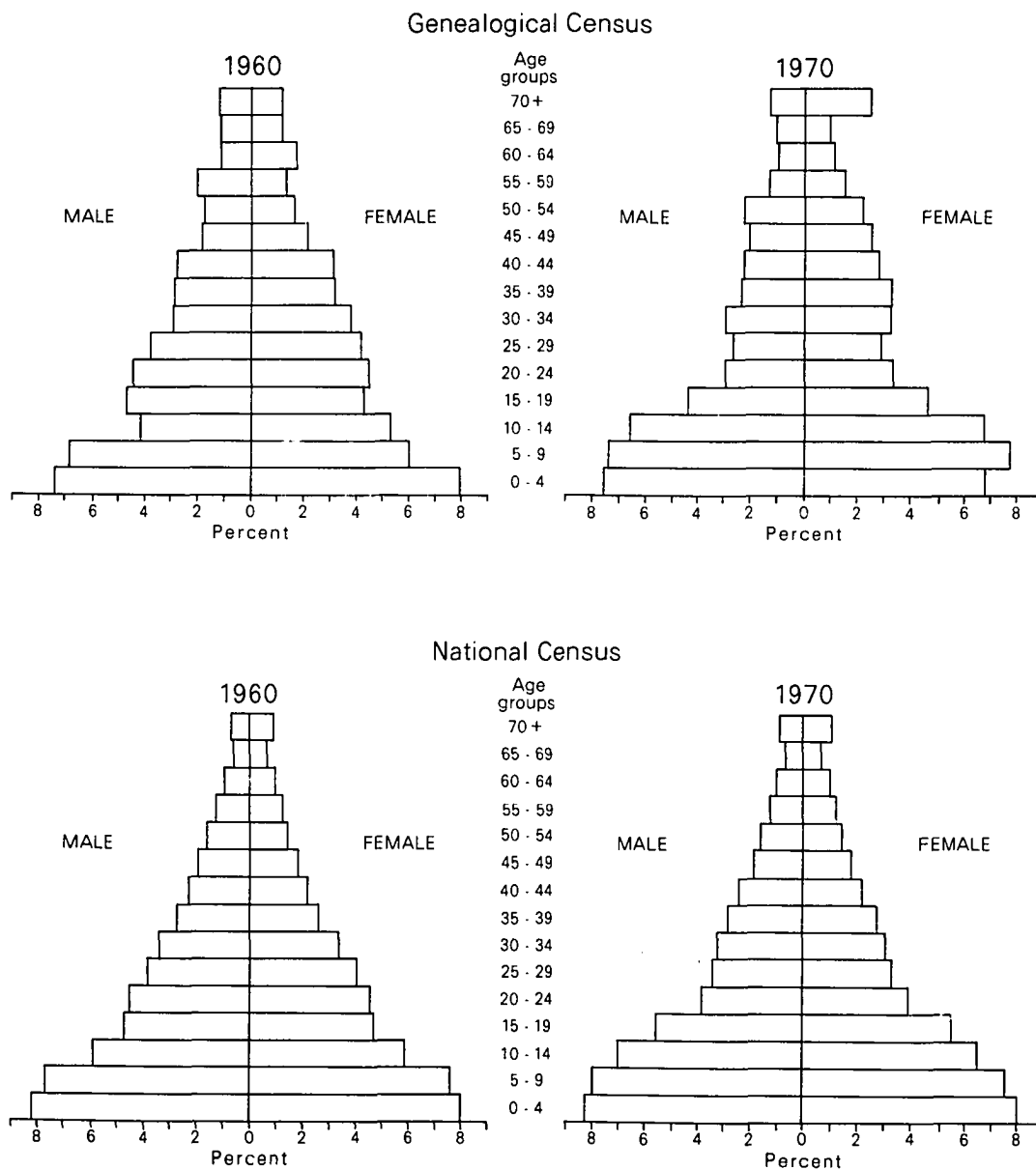


Figure IV.1. Population Pyramids from Genealogical and National Census Data



of government. They also bear responsibility for maintaining a system of household registration. Other government officials residing in Baan Tang Chang include 11 teachers who run the local school, a paramedic who manages the local clinic, and two policemen who in weekly rotation man a local police station. Except for two of the teachers, these other government officials were not permanent members of the community.

Though the community is near enough that the glow of Bangkok is clearly visible on the evening horizon, the approximately 70 kilometer straight line distance to Bangkok becomes over 100 kilometers when the more circuitous routes of the established transportation network are followed. For fully half of the year local trunk roads in and out of the community are completely impassable and all passage must be by water. A trip from Bangkok sometimes takes as long as four or five hours and requires transferring between several modes of transportation - express bus to river ferry to country bus to canal boat.

The seven villages of Baan Tang Chang are arranged around the wat at a distance of not more than two and a half kilometers. Informants reported that within five kilometers in any direction this was the first wat to be established in the area. Though no written records survive to verify an exact date of founding,¹⁰ villagers (including the abbot himself) placed the monastery's origin at between 125 and 150 years ago.

Prior to the construction of other neighbouring wat beginning some 75 years ago, Wat Tang Chang served a community more widely dispersed and sparsely populated than the approximately eight square kilometers of these seven villages. As the original area's population grew, both by the continued in-flow of frontier settlers and by the momentum of its own natural increase, outlying settlements sought to establish their own community identification through founding and constructing their own wat. As contributing to the construction of a wat is a primary way for individuals to make merit (tham bun), there was no lack of interested donors, either from within or outside the community. Indeed, many of the standing buildings and most of the land on which Wat Tang Chang presently stands are attributed to the merit-making sponsorship undertaken some 80

10. An inscription on a bell in Wat Tang Chang indicates that the bell was cast more than 200 years ago. Informants believed, however, that this bell was brought at some later time to Wat Tang Chang.

years ago by two wealthy brothers from a nearby market town. At present a new building used for various ceremonies and rites is being constructed from local village and outside contributions.

Each village has its own name. Most often it is a descriptive variant of Baan Tang Chang, such as Tang Bon (above the path) or Tang Lang (below the path). Sometimes, however, a particular settlement is designated by a distinct name, such as Lat Bua Kau (the field of white flowers), describing some feature which impressed the earlier settlers. Often residents of one village will refer to those of another by a name indicative of a trait, sometimes pejorative, which these latter are said to hold in common. Such characterizations as "the village of the card players", "the village of the poor people", and "the village of the Chinese", will usually have some factual basis. Sometimes, the government-assigned village numbers (village no. 1, village no. 2, etc.) are used by villagers to distinguish one village from another.

In an overview of available anthropological research, de Young (1963: 8-12) has designated three types of villages as typical of Thai settlement patterns:

- 1) a group of houses strung along a waterway or road,
- 2) a cluster of houses set among fruit trees, coconut palms, or rice fields, and
- 3) isolated households or an isolated group of several houses in the midst of their rice fields.

Map IV.2 shows that the seven villages of Baan Tang Chang have features in common with each of these three types of Thai settlement patterns.

A village saying evidences a basic economic equality among villagers - "We are the people of the rice fields, we are poor" (rao ben khon chaaw naa rao ben khon con). However, villagers readily recognize that economic disparities exist within the village. Indeed, it would be highly unusual if they failed to notice that about 50 percent of these "people of the rice fields" had no fields to call their own.¹¹

11. Information gathered from school enrollment lists (occupation of father), land deeds (chanoot) filed at the provincial capital, and village informants indicate that landlessness is by no means a recent phenomenon. Information from these sources substantiate that some amount of landlessness has existed from at least the turn of the century, and that most likely it approached the 36 percent landless figure which Zimmerman (1931: 18) found for Central Plains villages in 1931.

Even a quick appraisal of the differences among village household structures showed that there are significant disparities of wealth within the community. Depending on how much wealth a family has, a house may be constructed of fine teak hardwood or flimsy bamboo slats. Its walls may be of neatly sawn and firmly nailed boards or loosely hinged, woven reed mats. Its roof may be constructed of handmade tiles or of evenly-bunched thatch.

Regardless, however, of the materials used, all houses are of the same basic design. Set on wooden poles some 10 to 12 feet above the ground, and thus above the high-water mark during the annual flood, each house is basically a raised wooden platform, part of which is enclosed by walls and most of which is covered by a roof. All houses are on a north-south axis in accordance with a belief that this is the only properly auspicious layout for a house.¹² A single large room, usually open-sided to catch the cooling breeze, serves as both the main living and sleeping area. A kitchen is usually located in a separate area behind this main room. Except for an occasional cupboard or wall chest, houses are bare of furniture. Cooking, eating, and conversing, as well as sleeping, are all done on the wooden floor.

IV.4 The Annual Cycle of Village Life

Though agricultural mechanization and seasonal wage labour opportunities have in recent years altered the regime somewhat, the annual rice crop still dominates the rhythm, style, and economy of village life. Farm work patterns and the well-timed counterpoint provided by social and religious celebrations held throughout the year give to each season a special character and pace. Successive seasons and the alternating cycle of peaks and troughs in farm work and socio-religious activities throughout the year provides a basis for describing village life (see Figure IV.2).

12. Another similarly directional belief is held about a person's sleeping position. Formerly, when a person died from sudden and unexpected causes, the corpse was buried rather than cremated as is now the normal procedure. It is prescribed that a body when buried must always have its head to the west. In consequence it is also believed that when people sleep they must never sleep with their head to the west for that would be to lie in the same position as one who had died. Similarly, in sleep, people should not place their feet to the west for that would be offensive to the religious dictum that the door of the central ceremonial building in the wat should always face the west.

Figure IV.2. Annual Cycle of Village Life

MONTH	CLIMATIC SEASON		PHASE OF TRADITIONAL AGRICULTURAL CYCLE	COMPONENTS OF THE CONTEMPORARY WORK CYCLE		VILLAGE FESTIVAL
				In Village	Out of Village	
MARCH)		Post harvest	(Double cropping	Seasonal wage	
APRIL) D		slack season	(rice	labour	Thai New Year (13th-15th)
MAY) Y		Preparing fields for cultivation	((Some wage labour)	migration	
JUNE)		Sowing seeds	Farmhand wage labour		Wisakha Bucha
JULY)	(Rice growing)
AUGUST) R	(in the fields	Wage labour*	Seasonal wage labour) Lenten season
SEPTEMBER) A	(F			wage labour)
OCTOBER) I	(L			migration)
NOVEMBER) N	(O				Khathin khaaw saak
DECEMBER) Y	(D				Loy Khatong
JANUARY) C	(Harvest	Harvest wage labour		
FEBRUARY) O	(

* If government funds for local development (e.g. irrigation system development, bridge-building) are available.

Villagers recognize three distinct climatic seasons - the dry hot season (naa roon) from late January to April or May, the monsoon rains (naa fon) beginning as early as May and ending as late as November, and a short, crisp cold season (naa naaw) during December and January. Each season brings its own difficulties and blessings for villagers.

By the height of the enervating hot season the yearly rice cycle is at its lowest ebb. By February, or March at the latest, the annual rice crop will have been harvested and sold off or stored in household granaries. Though a few villagers put their fields into off-season corn, and somewhat more villagers double-crop rice, for the most part the fields lie fallow during this period. The fields, blackened with the ash of burned off rice stalks, are cracked and hardened by the heat of the dry season sun. The discomfort of long hot days is increased by strong winds raising clouds of ash from the fields. Most villagers spend these days doing chores around the house or fishing out the shrinking canals and ponds.

Neatly coinciding with the mechanization of agriculture and the consequent lessening of its physical demands on the farmers' labour, villagers have been provided with some additional alternatives for slack season employment. Developments within both the nation and the community have occurred to increase wage labour opportunities. Seasonal work in Bangkok industry or in the upland canefields of newly opened areas has over the last few years been joined by local slack season wage-labour demands for rice double-crop fieldhands or work on government-funded local development programs.

The rains which begin fitfully in May, inevitably seducing some farmers into premature planting, usher in the annual floods that renew the soil and transform the flat plain into a natural paddy well-suited for rice cultivation. The flood waters cover the 10,000:1 (Pendleton, 1962: 38) flatness of the plain for five or six months from July to December. To the outsider, life in stilted houses above the serenity of quietly lapping waters seems a life of peaceful enchantment. To the villagers, however, who have always known this life, the yearly floods are more a tolerated inconvenience. Livestock penned up on raised wooden platforms have to be constantly fed and cleaned, motor boats which are expensive and unreliable provide the only public means of transport in and out of the community, and the higher humidity of mosquito-filled evenings are some of the unattractive things that come with the rising flood waters.

So great is the inundation in normal years that there is little that village farmers can do to control water supplied to their individual fields. Most of the annual rice cropping is still done by broadcasting rice in the traditional manner rather than by the transplanting method used in more carefully irrigated areas. The broadcast rice is predominantly of a 'floating' variety which allows the growing stalks to adapt to the vagaries of uncontrolled flood levels. In consequence, 'green-revolution' varieties and artificial fertilizers are not much used during this annual crop.

The sudden plummeting of the temperature from its year-round average of around 30°C. to below 22°C. for a few weeks during December and January marks the cool season. This is greeted by villagers, however, not with sighs of relief but rather with a rash of complaints and sniffing colds. Acclimated to truly tropical weather, the cool season for all its regularity always seems to come as a shock to villagers. For one thing, many villagers cannot afford the expense of sweaters and blankets to be used only a few weeks out of the year. Most people fight off the cold by sipping cups of hot tea or potent cane whiskey. At least until the midday sun provides some respite, it is a period that many villagers feel is too cold to work.

Just after the harvest, which is usually finished by the end of February, and prior to the May or June plowing and sowing, the Thai New Year is celebrated in the Songkhran festival. For three days in a mood of unequalled gaiety, village men and women drop the sexual rigidity usually characteristic of their behaviour, and ribaldly chase, capture and douse each other with water to bless the coming year. In a more serious manner, both village elders and monks are respectfully and solemnly anointed with water during this festival.

In the midst of the other major lull in rice cycle labour at some six months' distance when the rice growing throughout the flooded fields requires little care, the other major village celebration is held on the occasion of Loy Khatong. Though restricted to the one night of the full moon, usually in November, which marks the highest flood tide of the season, again the infectiousness of slightly lowering the strict sexual standards which otherwise prevail ripples through the village. Drinking and dancing are the order of the night; romantic hopes are launched with the floating (loy) of candle-lit banana leaves (krathong) down the darkness of the klong.

Other more religious occasions, such as Buddhist Lent (phansaa) which begins on the 15th day of the eighth lunar month, and ends three months later, also coincide with a slack season in the demand for agricultural labour. Through the Lenten period villagers are more attentive to their religious responsibilities. Young men following the popular practice of becoming monks for a short period in early adulthood customarily serve in the monkhood for a single Lenten season.¹³ Because the number of monks sequestered in the wat for the Lenten period is four to five times greater than the number of monks resident at the wat throughout the year, village families take turns bringing prepared noontime meals to the wat. In addition, a number of villagers regularly gather at the wat for all-night vigils preceding the Buddhist holy days (wan phra) which occur every eighth day.

Soon after the end of Lent, with the retreat of the rains and prior to the harvest, is the period in which a one-day celebration to present robes, monetary, and other gifts to the monks may be held. This thoot khathin celebration may be held only once each year for each wat.¹⁴ Often wealthier Bangkok residents, sometimes with very little connection to the village community, sponsor this merit-making activity. If no outside sponsors are forthcoming in a particular year, the villagers themselves contribute and share responsibility for the khathin presentation.¹⁵

Two other festive occasions in the village calendar of yearly ceremonies should be noted. Villagers congregate at the wat to celebrate the occasion of wisakha bucha, the day on which, according to tradition, the birth, enlightenment, and death of the Buddha occurred. As one

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13. Tambiah (1976: 266) presents national figures for the 1968 Lenten season showing that monks comprised 0.5 percent of the total population. In the field site population there were 22 Lenten season monks in 1976 or 1.3 percent of resident villagers. A number of these, however, were actually residing elsewhere, coming to Baan Tang Chang only for the Lenten period.
 14. Though a khathin presentation may be held only once each year, willing sponsors are provided a very similar merit-making occasion when they can organize a presentation of gifts to the monks called thoot phrapaa.
 15. During the year of field study most Tang Chang villagers did not contribute or participate in the one khathin and three phraphaa occasions, all of which were sponsored by Bangkok residents.

ethnographer notes, this festival which was originally held in late April has been rescheduled by government decree to occur in late May (Kingshill, 1965: 199). Thus, because it now concludes with the beginning of the rains and the preparation of fields for cultivation it may not receive as much attention as it did formerly.

Another occasion of village-wide activity occurs in September with the Khaaw Saak festival. For several days in this otherwise slack labour period all village households engage in the preparation of a special puffed-rice (khaaw saak) condiment which is only eaten at this time. Though the ethnographer of a Northeastern Thai village has noted that the festival was an occasion on which villagers made merit for the spirits of their departed ancestors (Tambiah, 1965: 136), Baan Tang Chang residents do not impart this meaning to the celebration.

Village festivals are the focal points of communal ceremonies. Though weakened by the general modernization and secularization of Thai society, they continue to serve as expressions of community identification and solidarity. Traditionally, they were timed to coincide with slack seasons in the demands of rice cycle labour. With the modernization of agriculture and the growth of industry, the importance of and attendance to these festivals in village life has diminished somewhat. Nevertheless, the various celebrations which punctuate the passing of the year continue to attract much attention and interest, and to colour village life in traditional hues.

IV.5 Buddhism and Village Life

Along with 95.2 percent of their compatriots and the vast majorities of their Burmese and Laotian neighbours, the residents of Baan Tang Chang village are Theravada Buddhists. Westerners' frequent confusions over the differences between the Theravada and Mahayan sects may be most easily avoided by quoting Hamilton-Merritt, an American writer who has spent considerable time studying and practicing Buddhism in Thailand:

The Theravadists chose to adhere to what they term the orthodox school which follows more closely the Buddha's original teachings. This group stresses the role of the individual in seeking his own liberation, or nirvana, with the Buddha as teacher, not a god. The Mahayanists follow a more liberal inter-

pretation than the Theravada school. This group introduced the deification of the Buddha and the concept of the Boddhisattvas, enlightened beings who chose to remain among men to teach them the way of salvation, which diminished the importance of the concept that nirvana could only be obtained by individual effort. (1977: 20).

As in almost all other communities throughout Thailand, the Buddhist wat is the center both literally and figuratively of life in Baan Tang Chang. The brightly-tiled roof of its central ceremonial building and the towering chimney of its crematorium are the only edifices to rise significantly above the flatness of the plains. That the wat is thus highly visible from everywhere in Tang Chang nicely symbolizes the pervasive influence that Buddhism exercises over the community.

The wat community of saffron-robed monks exists in reciprocal harmony with the village community. In return for the material sustenance which villagers provide monks (phra), the monks provide villagers with the means for making spiritual progress. Making merit (tham bun) is the primary activity through which villagers express their religious faith; providing villagers with the opportunity for making merit is the primary way that monks serve individuals in the community. All religious ceremonies at which monks officiate are imbued with a 'making merit' character. It is only by increasing their own store of merit that villagers believe that they may progress along the path toward enlightenment.¹⁶

The reciprocity between monks and laity is best epitomized by the most common of merit-making activities, the daily provision of food by villagers to monks. The stillness of early morning darkness is broken every day by the stirrings of women preparing food in kitchens throughout the village. The thumping of pestle in mortar as condiments are prepared, and the crackling of fires beneath boiling rice pots are the sounds with which each day begins. With first light, the monks, on foot or in small

16. Villagers are somewhat vague as to what enlightenment entails. Though there are some popular conceptions of a heaven-like existence, most villagers are more immediately concerned with their next incarnation. Typically, they expect by making sufficient merit in this life to attain a higher human status, usually signified by greater material wealth, in the next life.

boats, leave the wat to wend their way from house to house in the community. The heads of those households which have prepared food wait patiently for a monk to appear on his quiet rounds. The villager silently greets his arrival with a wai¹⁷, places the prepared food in the monk's bowl, and gives another wai in gratitude for the opportunity of making merit. The monk without any gesture of recognition or gratitude, for it is the monk in providing the villager with a merit-making opportunity who is to be thanked, moves solemnly to the next household waiting to offer food.

Any male villager may at any time in his life, providing that he is not fleeing debts, criminal charges, or familial obligations, give up his mundane attachments to the world to pursue spiritual life in the monkhood. In village society this means that the individual forsakes rice farming and raising a family for a quiet life of fasting, meditation, study, and performing religious rites.¹⁸ The austere life of a monk is recognized as the most meritorious of all human endeavours. By custom, most male villagers enter the monkhood for at least a short period, usually a single Lenten season, in early adulthood prior to marriage. Fulfilment of this custom confers upon the young villager a higher status in the community both as given expression in the honorific title thit by which he may be addressed thereafter and by the recognition that he is now a mature (suk) individual ready to take up the responsibilities of adult life. In addition, by becoming a monk it is believed that a young man makes merit for his parents.

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17. The wai is a customary salutation of greeting or gratitude made by raising the hands in a palm-together position to the face. Status differentials between individuals are given recognition by variations in the height to which the hands are raised. A person of low status will greet a person of high status by raising his pressed-together hands high on his forehead, while in return the high status individual will barely recognize the salutation by quickly raising his hands to only the level of his chest.
18. Monks must follow a strict regime as laid out by 227 rules of the order (sangha). These include rules for fasting, strict prohibitions on taking life, and celibacy. Though villagers sometimes joke about the reasons that various individuals have for becoming monks (e.g. disappointed in love, too lazy to work), in general it is recognized to be an austere regimen of life which only a few can faithfully follow. Bunnag (1970: 87) states that it is the prohibition against taking life which precludes a monk from cultivating the land for this would involve the destruction of organisms living in the soil.

The Buddhism in which all Tang Chang villagers professed a belief is not the pure and unadulterated religious system of the Theravada tradition. Through a millenium of becoming accepted by and acceptable to various cultural groups throughout Southeast Asia, Buddhism absorbed and accommodated various pre-existing beliefs which were popularly held. In Thailand, monks officiate at a number of ceremonies which are not at all Buddhist by origin. Buddhist monks, for example, preside over such important Brahmanistic rituals as top-knot cutting or the annually held royal plowing ceremonies. Astrological systems to forecast the future or to determine auspicious or inauspicious signs in the present are similarly well-tolerated within Thai Buddhism. Various naturalistic or animistic beliefs of villagers, such as those in tree and water spirits, house spirits, and ghosts, exist harmoniously alongside such Buddhist doctrines as the law of karma or individual responsibility for attaining nirvana. In former times especially, many monks combined their religious office with the practice of traditional medicine. Herbal medicines and spirit exorcism were sometimes combined with magico-religious uses of Buddhist texts or symbols.

As a community institution Buddhism has been only minimally affected by modern change.¹⁹ While beliefs in ghosts and traditional medicine are in noticeable decline, adherence to Buddhism appears to be as strong as it ever was. Though the wat increasingly draws support from sources outside the community in the form of money or material goods, for daily sustenance it continues to rely upon villagers and to be responsive to them. While some of its traditional and more secular functions such as providing health care for villagers or education for village males have diminished with the development and spread of the government health and education systems, Buddhist principles and practices continue to be impressed on the young and espoused by the old. While other community institutions such as cooperative labour groups have totally disappeared, villagers continue to define and maintain a sense of community

19. At a national level, Buddhism in Thailand has periodically been revitalized through reform movements originating both outside the nation, such as the Sinhalese reforms of the 13th century, or inside, such as the reforms initiated by King Mongkut in the 19th century. At present a more socially responsive interpretation of Buddhist texts is making headway at the higher echelons of national Buddhism (Tambiah, 1970: 441-444). Though this has resulted in some specific programs allying Buddhism with community development programs, in general, this movement has not yet had much impact on traditional village communities.

through their support of the village wat. That the number of young men entering the monkhood in early adulthood has been proportionally the same over the last three generations is an indication of the continuing strength of Buddhism at the local village level:

Table IV.1 Percent of Village Men Following Ordination Custom by Cohort

<u>Age at Time of Life History Survey</u>	<u>Percent Ordained as Monks*</u>	<u>Total Males</u>
18 - 25	41.2	68
26 - 35	79.3	58
36 - 45	84.3	70
46 - 55	76.2	63
56 - 65	74.2	55
66 - 75	73.3	15
75+	85.7	14

* First ordinations occurring after the age of 35 years old not included as this is different from the village custom of ordination in young adulthood.

While these ordination figures²⁰ support the contention that adherence to Buddhist tradition has not diminished in Baan Tang Chang, other factors should be considered. Though about the same as the national average of 2.0 percent of adult males (Mulder, 1969: 35), the number of permanent monks at Wat Tang Chang, five to seven during the year of field study, was said by villagers to be fewer than in the past. In addition, monkhood service for some, primarily because of pressures created by modern wage labour opportunities, is much less than the traditional three month Lenten period. In these regards attendance to Buddhist traditions in Baan Tang Chang parallel what Tambiah (1976: 265-270) found to be the

20. These proportions are significantly higher than the 50 percent that both Tambiah (1970: 58) and Mulder (1969: 22) estimated for the Northeastern and Central Plains communities they studied. Phillips (1969: 26) found that in the Central Plains community of Bang Chan only 31 percent of adult males became monks, and cites Moerman's figure for a northern Thai-Lue community of only 30 percent of adult males ever having been ordained. Differences between these and study community figures can be attributed to several factors: greater adherence to the tradition in Baan Tang Chang, more accurate reporting within the life history matrix, greater precision resulting from calculating percentages by cohort.

trends of national level practice. Similarly, however, Tambiah's conclusion that "the practice of and commitment to Buddhism have not diminished in the face of ... modernization and economic development" (1976: 267-68) seems equally applicable to the situation in Baan Tang Chang.

IV.6 Kinship in Thai Village Society

Kinship throughout Thailand has been classified as "based on the principle of bilateral descent" (Amyot, 1965: 164). Some attention has been given to how kinship relations have been affected by a country-wide tendency towards matrilocality (Amyot, 1974: 43-44; Kemp, 1970; Keyes, 1975; R. Davis, 1973). My purpose in this section is to briefly describe how kinship relations affect life in the study community.

On the surface of Central Plains village life, kinship appears to provide a kind of social mortar which cements cohesive alliances between individuals and groups in the community. Upon closer examination, however, it was found that if kinship once served this binding function it is not at present serving it very well. Rather, social behaviour among villagers tends to be "weighted in the direction of atomistic and non-relational considerations" (Phillips, 1965: 95) and away from the utilization of corporate kinship structures. Though villagers in this, as in most rural agrarian societies, are highly cognizant of who is related to whom, they choose for the most part not to use this information to their own organizational advantage. That the framework is there does not mean that it will be used.

As a result of long years lived in close proximity many intra-community marriages have occurred in Baan Tang Chang to forge kinship linkages throughout the community. Matrilocality as practiced by couples for a few years after marriage (prior to accumulating sufficient resources for constructing a house of their own) is preferred and often practiced. However, like most other kinds of normative behaviour in the village, this does not have the force of an invariable rule of behaviour²¹. While

21. In a study of three Central Thai villages (Amyot, 1974: 43) has pointed out that the matrilocality tendency is significantly important as the means for attaching a son-in-law's labour to his wife's nuclear family and in strengthening the influence that maternal relatives exercise over their daughter's new family. My point is that such factors should not be emphasized as matrilocality is only a tendency in the Central Plains,

Continued.

there is considerable flexibility about where offspring live after marriage, the 25 percent of villagers of Chinese ancestry seem as likely to exhibit patrilocal residence patterns as their ethnically pure Thai neighbours are to exhibit matrilocal patterns. Thus, as Potter (1976) points out, the greater evidence of ambilocality for Central Plains communities in comparison to communities in other regions of Thailand may, at least in part, be a product of the greater influence that Chinese have had in this area.²²

Tracing village kinship relations invariably leads through several households spread throughout the community. Few village households exist as isolates without some kin relatives living nearby. Though some multi-household compounds are in evidence,²³ the most common living arrangement is the single family unit established independently of relatives living elsewhere in the community. Though at any given time three generational families commonly occupy about one-third of village households, this is primarily a manifestation of how Thai families care for their elderly at a particular point in the family cycle.

sons-in-law usually reside only temporarily in their wives homes, and Thai villagers have no concern for utilizing kinship to construct strong corporate groups as an operational strategy in the community. However, the important role that wives play in household decision-making processes may well be traced to the matrilocal residence pattern.

22. In a related issue, Ingersoll (1975) attributes some of the post-nuptial residence differences between findings from his study conducted in two communities, one in the Western Central Plains and the other in the Northeast, and the findings derived from studies conducted in Ban Chan, a community only 15 kilometers from Bangkok, to basic ecological differences between the study areas.
23. Such compounds are groups of contiguous households inhabited by kinsmen. There is no established plan for arranging households to form a compound, rather compounds occur when a single family has sufficient land near an original homestead and sufficient offspring, usually daughters, who after marrying and living with their spouse in the family household for a few years, accumulate enough resources to build their own house. There are no strict rules of inheritance or household composition. Though Mizuno (1968) states that a similar situation exists in the Northeast, the apparently greater prevalence of multi-household compounds which exists in that area as compared to the Central Plains is seemingly the result of their greater tendency to cooperate in work activities.

Preliminary indication that extended families are not an important functional component in village life is provided by the vaguely constituted and shallowly delineated categories with which villagers identify kin relationships. Villagers would often state that they were related to certain other villagers but would be unable to summarize the relationship with a single kinship term. Beyond expressing that they were "relatives" (phii-nong kan or yaat kan),²⁴ terms used to gloss all relatives beyond those in the line of direct descent, more precise specification of the relationship had usually to be approached by tracing through a succession of kin linkages. As Riley (1972: 263-264) demonstrates, villagers do not have an extensive or wide vocabulary of kinship terms.

Another factor which supports the contention that extended families are of little corporate importance in Thai society is provided by the progressive inheritance system practiced by Thai families. That family property is equally divided among all the heirs undermines the economic continuity from one generation to the next that would be necessary to sustain a corporate family system (Punyodyana, 1972: 350-352). In addition, there is little emphasis upon family lineages that often provide a basis for corporate descent groups. Most villagers were able to trace family genealogies through only a few ascending generations.²⁵ That the Thai people did not have surnames until they were introduced by Rama VI in 1916 underlines the unimportance of lineal descent.

In traditional village society there is some evidence that cooperation between village kindred living in separate households was rather more frequent than it is at present. Prior to the disappearance 30 years ago of cooperative (long khaek) and reciprocal (ao raeng) labour

24. The term phii (older) and nong (younger) are commonly applied to siblings to differentiate relative age rankings. They may also be used as terms of address by unrelated individuals to denote relative age status between otherwise equal persons. The phrase "phii-nong kan" commonly means "relative" though especially in the village setting it may denote a fictive rather than actual kin relationship. The term yaat kan usually means that an actual kin relationship exists.

25. It should be noted that genealogies traced even through just the grandparent's generation provide a data base for demographic reconstruction of approximately 60 years depth.

groups in the village community, informants report that cooperative farm work arrangements between households generally followed the lines of kinship. There were no rules of kinship obligation or any semblance of unilineal corporate descent groups. With some relatives cooperative arrangements existed; with others they did not. Perhaps blood ties provided a line of least resistance for establishing and maintaining cooperative relations, but they did not predetermine or prescribe a set pattern of obligations or commitments. The basis of cooperation was reciprocity not kinship, and cooperative arrangements were dyadic and ephemeral, not corporate and binding.

With increasing monetization of the rural economy cooperative working groups declined. In contemporary village society there remains only minor vestiges of the cooperation that formerly existed between village households. In joining together to support the local wat and in reciprocal money-gift exchanges at household life cycle celebrations such as marriages or funerals,²⁶ villagers maintain a semblance of their past communalism. More notable, however, is their inability to cooperate either along kinship lines or in association with neighbours even when it is recognized that it would be to everyone's advantage to do so. An incident that occurred during the course of field study illustrates the point.

Shortly after several Tang Chang farmers had finished plowing and broadcasting rice over several hundred rai of individually owned and worked fields, a nearby irrigation channel broke. Within a few hours large amounts of water had inundated their fields and threatened to negate their several weeks of previous work. Though the break was visible to all and its repair something that several workers could effect in just a few hours, for five days the unwanted water continued to flow into their fields. Though many people talked of the damage that was being done, and speculated as to the original cause of the break, the affected villagers

26. At the presentation of gifts of usually ten to twenty baht (\$.50 to \$1.00 U.S.) the donating villager watches carefully to make sure that the correct amount is listed next to his name in a notebook which each household keeps for precisely this purpose. When, in turn, perhaps after the passage of several years, an occasion arises providing an opportunity for the erstwhile recipient to return the gift, he will consult the notebook to make sure that he returns a gift of at least the same amount, or if inflation warrants it, slightly higher.

themselves took no action to remedy the situation. Finally, on the fifth day, a wealthy man from a community several miles away, whose extensive efforts to double-crop rice in his own village were now also being threatened by the continuing flow of water, arrived in Baan Tang Chang with some of his own workers to make the repairs. He told of his efforts to get Tang Chang villagers to assist in this work, and how, though many agreed to help, only a few actually did so. With a work force of less than ten people the repair was finally made within a few hours' time. The villagers' inability to cooperate to make the repair prior to this outside impetus cost them both in wasted seed rice and additional work time to replant their fields.

The point is not that villagers never cooperate, but that they experience difficulties in doing so.²⁷ As one village headman related, "If we try to work together to build a road it will not get done. But if the government orders us to build it, we will do it". To cite a recent example, in the face of an invasion of rats that threatened the 1977 rice crop, a government initiated program to have villagers cooperate in a "rat extermination day" had some success.

Informants report that especially in the past, wealthier families might have paid-workers or unpaid clients living with them for several years. Occasionally, distantly related kinsmen may similarly be attached to larger landholding households. As Punyodyana has pointed out such co-resident kin and non-kinsmen "do not constitute membership in a corporate family group ... as they are merely dependents of the nuclear family who neither share the family property in a contractual manner nor are entrusted with prescribed rights and duties which are assumed to be permanent or trans-generational" (1972: 347).

27. It may not be merely happenstance that the only information I was able to gather on current cooperative farmwork arrangements between village households occurred between related families of Chinese descent. Amyot (1972: 80-81) has noted the advantages conferred upon Chinese business enterprise in Thailand by the strength of their extended family bonds. Even though several generations removed from their homeland and outwardly in terms of language, religion, and most behavioural characteristics completely assimilated into Thai village culture, Tang Chang residents of Chinese descent may still maintain some remnants of their cultural heritage that differentiates them from their purely Thai neighbours (see Appendix C).

For members of nuclear or three generational family households the shared responsibilities for socializing the young, caring for the old, and working in the rice fields make kinship relations an important feature in their daily lives. Beyond the household unit, however, kinship is not very important structurally or even practically in the conduct of village life. Though friendly or even limited cooperative relationships beyond the household are likely to follow the lines of kinship, kinship itself does not predetermine or obligate responsibilities between related individuals.

IV.7 Summary and Conclusion

In this chapter my principal concern has been with presenting an ethnographic description of the people of Baan Tang Chang. The dominant features have included the annual cycle of agrarian/socio-religious activities, unanimous adherence to Theravada Buddhism, and non-corporate kinship structures of shared household residence. Though approached principally from what anthropologists call the "ethnographic present", this description has in passing noted the impact that modern change has had on several aspects of village life: agricultural mechanization and seasonal wage labour migration have affected the rhythm of and attendance to village work activities, the disappearance of cooperative work patterns has undermined the economic base for communal solidarity, healing and teaching functions once performed by local monks have largely been supplanted by modern developments in health and education. In successive chapters more direct attention will be paid to the historical dimension of village life.

The population pyramids used to introduce the contemporary village population show the broad-based triangular shape that is typical of developing countries that have experienced rapid population growth. Within the detail and depth of field study data it is possible to analyse particular aspects of the demographic present and make comparisons with the demographic past. As a first step in the next chapter an overview of community population trends from early settlement to modern times is presented. In the following two chapters a more thoroughly quantitative investigation of community demographic history and recent demographic change is undertaken.

The various kinds of data available allow analysis to proceed at several levels and in several ways. Not only, for example, may migration as the most frequently ignored component of population undergoing

demographic transition (Friedlander, 1969) be included in the analysis, but also qualitative data provides a basis for examining the behavioural dimensions which have produced and been effected by demographic change. In this way, particularly at a later stage in this study, will analysis involve a more thorough examination of the ethnographic parameters of village life outlined in this chapter. The depth of field study data provides a means to explore the motivations which underlie particular patterns of demographic behaviour.

CHAPTER V

POPULATION TRENDS IN BAAN TANG CHANG:
A BRIEF HISTORY OF THE STUDY COMMUNITY

"The knowledge of past times and of places on the earth is both an ornament and nutriment to the human mind." - Leonardo da Vinci, The Notebooks

Presenting the demographic history of the field site community is prerequisite to analysis of the demographic behaviour of villagers. Just as children are socialized into particular social and cultural contexts which will greatly determine and affect their behaviour as adults, so must the behaviour of social groups be affected by the collective experiences of their common past. Lessons learned from the past, including the demographic past, are transmitted to the present by institutionalized values and norms which are at base the means with which society attempts to assure its own survival into the future. In this and the following two chapters an attempt will be made to present a baseline of demographic history in the study community. In later chapters demographic behaviour in Baan Tang Chang will be analysed from the perspective of the cultural context in which the community has developed.

The purpose of this chapter is to present a brief history of population trends in the study community. The objective is not to provide year-by-year estimates of demographic rates, but rather to illuminate overall trends of demographic occurrence. To this end reliance is placed more heavily upon qualitative than quantitative data. What villagers recalled from distant memories of earlier times, most often while reflecting on their own family histories, or what they perceived in broader terms to be particular population trends, most often when contrasting the present with the past, are the primary data sources upon which this chapter is based. Specific dates or occurrences of community-wide importance were corroborated through discussions with informants outside the community or reference to historical studies or records. Where quantitative data from any of the three surveys conducted during field study provide supportive evidence to informant reports, suitable data tabulations are also presented.

Qualifications about data reliability are made where necessary and appropriate.

V.1 Community Migration Trends: Early Settlement and Recent Emigration

Villagers offered no traditional or popular version of the origins of their community. Unlike communities in Northern and Northeastern Thailand which often have village shrines that trace back to an ancestral founder, the origins of Baan Tang Chang are fragmented among personal memories of who their ancestors were or where they came from. Unless family histories of long ago recount some remarkable occurrence, they have become merely vague remembrances of a past no longer important. Villagers reaching more than two generations into the past were often unable to recall where exactly their ancestors had come from or how they happened to settle in this community. Why they came was felt to be more obvious - to clear the wilderness, "to get their own piece of land" (cap thii din).

Though there are no legends of village origins from which to begin, individual family histories coalesce around several interesting points. For the most part movement into the community was from nearby river settlements to the east. The animal track that elephants and forest buffalo followed from west to east in search of water during the long dry season, became with the monsoons a waterway providing an easy route for riverine villagers to follow into the uninhabited interior. Hunters, one suspects, made occasional trips into the area in search of game; the ivory tusks of elephants among other things were highly prized for trade.

If hunters had firsthand knowledge of the area, it is likely that they may have been among its first settlers. The clearest details that villagers recalled about ancestral settlers were often tales of their prowess as hunters. Though settlement occurred for the purpose of clearing land for farming rice, this was not likely a task that fell to people without some knowledge of life in the hinterlands.

A clear pattern of migration and settlement in a new area, one that persists to the present day, is the chain of movement between relatives. Once an initial bridgehead is established and successful, one's relatives may soon be encouraged to follow. The genealogical histories reveal clearly the patterns of movement between brothers and sisters, in-laws and cousins. When contemporary villagers are asked what places

they would consider moving to if they wanted to live elsewhere, they invariably list the places where relatives already reside.

Having knowledge of where one could relocate is not itself the motivation to do so. The history of the Central Plains is that of frontier settlement - in this area a steady flow westward in search of suitable land. As the populations of established riverine settlements grew, those unable to get sufficient land would move off to where they could. However, a day's journey into the unsettled environs of present day Baan Tang Chang was rather an extraordinary response to localized land shortage. Seemingly, unless other circumstances intervened, more gradual dispersal and resettlement across the flood plain would have more easily satisfied the need for land. Though in a later period many villagers came to the already established community of Baan Tang Chang through this route of gradual dispersal, in the earliest years some rather interesting circumstances, gleaned from distant memories about early settlers, appear to have been responsible for this leap into the interior.

The closer villagers lived to the channels of communication between the village and the ancient royal polity, the more likely that they would be required to spend three months of each year in corvee labour. This system of forced labour applied only to male commoners (phrai) who lived within a "hierachy of clientships" that prevailed in Central Thailand in the eighteenth and nineteenth centuries (Rabibhadana, 1975). Though gradually weakened after the 1850's by changing conditions and progressive monarchs, the corvee system was not formally abandoned until 1899. Though generally benign,¹ slavery in different forms, from temporary debtor to permanent chattel, was also an important feature of traditional Thai society. Those who chose to break the bonds of corvee obligations or slavery subjugation by moving to the hinterland were largely free to do so. Many of the eldest Tang Chang villagers recalled seeing tatoos of bondage on their grandparents' forearms. Thus, it can be reasonably inferred that desire to break from the established system

1. The economic historian Ingram states that Thai slavery existed in a "far milder form than that known to Westerners" (1971: 61). Slavery was officially abolished by royal proclamation in 1905.

of control and obligation played a part in motivating early migrants to take up life in the interior.

The village wat, established at some undetermined time in the past, was the object of merit-making construction efforts some eighty years ago. Two wealthy brothers from a riverine market town sent several families who were under their control to do this work. After the wat buildings were completed, several of which remain standing to this day, many of these workers stayed on in the village. Their descendants continue to live in the village just to the west of the wat.²

Migrants who originated from more distant places than the riverine settlements were better remembered. One village woman, for example, recalled in legend-like form the thousand mile trek an ancient relative made from Laos after its capital city of Vientiane was sacked. Somehow, and for unknown reasons, he and his entourage came all the way across Northeastern Thailand and through the Central Plains to establish a small community within view of Baan Tang Chang. Similarly, Chinese migrants who first began settling in the community in the early 1900s were often recalled in greater detail than other migrants. The particular path they followed, by steamship from Southern China to Bangkok, working at odd jobs from railway coolie to market town hirling, and finally arriving in the interior, was often known to their descendants.

Once Baan Tang Chang was an established community and especially after it had a wat that was sizeable and impressive, the dominant form of migration increasingly became movement back and forth between the community and other nearby villages more recently settled. During the collection of genealogies it became apparent that re-settlement of marriage partners in the village of their spouses has been an important component of migration throughout the community's history. Though much of this movement followed the preference for matrilocality, this was not a rigid rule of residence that all couples were obliged to follow. Because opportunities for social

2. To this day this group of villagers remains largely impoverished and curiously affected by the former status of their ancestors. Most are landless farmers renting from a single landlord to whom they appear subjugated beyond the tenets of normal tenancy arrangements. They rent not only the land they farm but also the land on which their houses stand. They claim to be so under the landlord's control that he is said to even dictate what paths in and out of their village they are to walk on.

contact in early times were limited, marriage partners were usually chosen from among people living within the community or within short distances from it.

With the transportation improvements and economic developments that have occurred in this century, most dramatically in the post-World War II period, villagers began to move off in significant numbers to more distant places. Though understated because of the likelihood that retrospective recall is selective for in- over out-migrants, it is clear from Table V.1,³ that considerable out-migration was occurring prior to the post-War period. Early improvements such as completion of a national railway line through the lower Central Plains by 1901 and the regular use of steam powered boats on tributary river routes by the 1930s did not greatly affect local migration patterns. Few villagers found their way to new areas by means of these new transportation developments. Local transport, by foot in the dry season or by row boat in the wet, still took a half day to the nearest river entrepôt. A much longer journey was required to reach the nearest train station. Nevertheless a few of the older villagers recalled the relative ease, though not inconsiderable expense, of an all night passage to Bangkok by steam boat compared to the three days and nights it took by the tide-water river barge of earlier times.

More significant for villagers were the post-War changes brought about by improvement in the Central Plains canal network and the growing use of small canal boats powered by combustion engines. Before construction of a river barrage at Chainat north of the study community, Klong Tong Chang was filled with water only five or six months of every year. With the greater control of water flow that could be exercised after completion of the barrage in 1956, the klong became a year-round waterway. With World Bank assistance development of an extensive system of lateral canals and drainage ditches was undertaken in the Central Plains from 1952 to 1964. First diesel engines and later converted car motors were used to propel boats over even the smallest waterways cutting through the plains.

3. The procedures used in calculating demographic rates from genealogical census data are explained in Appendix B.

Table V.1. In- and Out-Migrants as Percent of Total by Year of Movement

Years (A.D.)	In-Migration	Out-Migration	Total	Migrant Years (B.E.)
1917-1936	55.6 (214)*	44.4 (171)	100.0 (385)	2460-2479
1937-1946	39.8 (113)	60.2 (171)	100.0 (284)	2460-2489
1947-1956	34.6 (152)	65.4 (287)	100.0 (439)	2490-2499
1957-1966	23.0 (162)	77.0 (541)	100.0 (703)	2500-2509
1967-1976	16.3 (156)	83.7 (799)	100.0 (955)	2510-2519

* (N)

Another development that greatly affected local transportation came about with increasing government commitment to road construction. In the 1950s and 1960s a system of modern highways was built to provide major road linkages to all areas of the nation. As one source states, the tremendous economic expansion that has occurred in the nation "since 1950 has been accompanied by a tripling in road transport activity", (Smith et al., 1968: 394). In the Central Plains a shift from water to road transport was one consequence of the emphasis on road building (see Hafner, 1974). This is apparent even within the immediate vicinity of the study community. Upon completion ten years ago of a major highway 13 kilometers north of Baan Tang Chang and subsequent construction of a local trunk road, village market activities have shifted from an old marketing center about 8 kilometers away on a klong to a new market town some 20 kilometers distant on the new highway.⁴

Rapid developments in modern transportation have been paralleled by improvements in communications. In 1931 the first public radio broadcasting began; in 1955 television broadcasting was initiated. In the villages, first radio contact occurred during World War II when Thai soldiers were stationed in Baan Tang Chang to relay word of approaching Allied bombers to their Bangkok commanders. At present the local community headman has a transmitter to send and receive messages. Soon after the War, the first radio receiver, a large console set powered by a generator, was brought by a wealthy villager to the community. Not, however, until the transistor revolution of the 1960s were most villagers able to afford radios. At the time of field study 94.9 percent of all village households had owned at least one radio. In addition, surprising because the village was still without electricity, three village households possessed television sets which were powered by small generators.

The objective here is not to determine cause but to denote trends in village migration patterns. Transportation and communication system improvements in the post-War period facilitated migration by opening up the range of possible destinations to which a villager might go. One result of these developments has been a virtual revolution in village migration

4. The shift has occurred in spite of the fact that the local road is impassable for several months of each year. Villagers say that the greater number of goods and merchants available at the new market town is the reason they prefer it. They say simply that it is more "lively" (chiiwit chiiwaa).

patterns. The near balance between in- and out-migrants which appears to have prevailed through the 1920s and 1930s shifted rapidly after that time to an increasing predominance of out- over in-migrants (see Table V.1). In addition, after World War II the short distance moves which dominated out-migrant destinations through the earlier period shifted to movements of a much longer distance (see Table V.2).

Villagers state that economic motivations have been the predominant factor effecting these new migrant patterns. Consonant with transportation and communication system improvements over the last 25 years, villagers began with increasing frequency to become aware of and to answer the demand of new economic opportunity. In the beginning almost all long distance out-migrants were destined for the wage labour and trading activities of the expanding Bangkok metropole. As roads penetrated undeveloped frontier regions, especially in the hill country to the north and west of the field site, a secondary migrant stream gathered force (see Table V.3). Profits from upland crops such as corn and sugar became possible because roads opened new lands to settlers and provided access to markets.⁵

While movements between relatives continue to play a vital role in setting up migration chains between places of origin and destination, the fluidity allowed by modern transport has made seasonal migration a much more prevalent practice than it was formerly. By the field study year 34.9 percent of the 819 resident adult villagers reported that they had, at one time or another, engaged in seasonal migration. The seasonal pattern of the yearly rice cycle accommodates regular flows of villagers into and out of the community. Construction work in Bangkok and agricultural labour opportunities in upland areas attract greater numbers of villagers each year. For some, seasonal migration has been the pathway to permanent re-settlement elsewhere.

In this section a brief overview of village migration patterns has been presented. The purpose was more descriptive than analytical. More precise attention to variables that intervene to determine who does and who does not move, where they move to, and what they do when they get there will be given consideration elsewhere in this study.

5. An additional development which facilitated the opening of upland areas was the availability of large tractors to clear the forested hillsides for cultivation.

Table V.2. Out-Migrant Destinations by Distance as Percent of All Moves* for Selected Time Periods

Years (A.D.)	Short Distance (under 30 km.)	Long Distance (over 30 km.)	Total	Years (B.E.)
1917-1936	74.7 (124)**	25.3 (42)	100.0 (166)	2460-2479
1937-1946	55.6 (84)	44.4 (67)	100.0 (151)	2480-2489
1947-1956	49.5 (137)	50.5 (140)	100.0 (277)	2490-2499
1957-1966	37.8 (208)	62.3 (343)	100.0 (551)	2500-2509
1967-1976	30.0 (252)	70.0 (649)	100.0 (901)	2510-2519

* Forty-four migrants whose destinations were reported as unknown have been excluded from this table.

** (N).

Table V.3. Long Distance Migration Destinations as Percent of Total Long Distance Moves

Years (A.D.)	Bangkok	Up-country Farm Areas*	Other Long Distance	Total	Years (B.E.)
1947-1956	65.7 (92)**	7.9 (11)	26.4 (37)	100.0 (140)	2490-2499
1957-1966	42.3 (145)	26.8 (92)	30.9 (106)	100.0 (343)	2500-2509
1967-1976	47.3 (307)	24.7 (160)	28.0 (182)	100.0 (649)	2510-2519

* The provinces of Tak, Sukhothai, Kamphaeng Phet, Phitsanalok, Phichit, and Ganchanaburi to the north and west of the study community.

** (N).

V.2 Trends in Village Mortality

The purpose of this section is to provide a brief outline of traditional mortality conditions and the direction of recent change. The transportation and communication system developments outlined in the previous section have had a similarly dramatic impact on village mortality levels. The two-way flow of information, goods, and people thereby facilitated has considerably changed the conditions of traditional village life. Mediated by economic developments occurring within both the community and the nation, one general consequence has been that village mortality levels have rapidly declined.

Villagers recall that just after World War II a severe cholera epidemic swept through their community leaving so many dead so fast that the corpses piled up high in the wat. However, as older informants reported, this was only the last of several scourges which had previously decimated the community's population. Around 1935 another epidemic, probably also cholera and reportedly just as severe, had struck Baan Tang Chang. Similarly, as only the eldest villagers could recall an even earlier epidemic of smallpox had once ravaged the community.

Though the extreme hardship and tragedy of these periodic epidemics were vividly recounted by field site informants, other severe conditions also took their toll in the past. Almost all villagers over 40 years of age maintained that greater numbers of infants and mothers died at or soon after childbirth in the past than do so presently.⁶ Similarly most villagers claimed that the incidence of malaria and tuberculosis was much higher in the past than it is at present.

In addition to reports of diseases that were periodically epidemic or perennially endemic, informants recalled other adverse conditions that affected village life. As throughout the Central Plains, crop shortfalls were once a regular occurrence in the community. On at least one occasion, in 1919, a severe drought occurred destroying almost the entire year's harvest. For a later time villagers could point to the high water marks of a 1946 flood which were imprinted on the woodwork of their houses. Again

6. The one villager who denied this as a general trend was a traditional midwife who had something of a vested interest in maintaining that fewer infants died in the past than presently. Two other village midwives confirmed that infant mortality had declined.

they reported that crops were seriously damaged. More often the problem was that the annual water levels were something less or more than that needed for a satisfactory harvest.

Construction of a system of water control for the Central Plains, first proposed in the early 1900s, was not completed until more than half a century later.⁷ Regional water level records show that before 1950 good flood conditions for rice cultivation were reached only one out of every three years (Dobby, 1960: 273). Villagers recalling the year to year hardship they or their parents once faced in trying to grow sufficient amounts of rice to see them through the year often volunteered a ratio of good to bad years in exactly these same proportions.

Crop shortfalls, periodic and usually of short duration, were then a contributing factor to high mortality levels in the past. However, for the most part the land did provide and did provide well. Though lean years were common, famine was unknown. Even though water flow irregularities could cause severe deprivation, food intake always remained above starvation levels. In the most dire circumstances, some foods such as fish, fowl, or even the buffalo that worked the land were always available.

Living on an alluvial flood plain itself provided some positive benefits for villagers. The alluvial floods that continually replenished the soil also broke the fecal contamination cycle so debilitating to people living in areas not so abundantly blessed. In addition, the annual floods brought a plentiful supply of fish that, smoked or dried, provided a year-round source of protein.

While both sudden death and chronic ailments were common enough throughout community history, the massive devastation of epidemics were the exception not the rule, the regular occurrence of crop shortfalls brought hardship not disaster. There was, however, little that villagers could do to prevent or remedy whatever misfortunes or illnesses came their way. In particular, traditional medical practices which combined native pharmacology with magico-religious psychology enjoyed only limited success. Though many villagers testified to the powers of particular traditional

7. Small (1973) provides a good summary of irrigation system development in the Central Plains.

doctors (moo booran), herbs, or amulets, these practices were usually no match for such afflictions as a ruptured appendix, the crippling deterioration of tuberculosis, or a birth with complications. Against contagious infections suddenly sweeping through the community villagers relied heavily upon fate and prayer that somehow this "ghost that eats people" (phii kin khon) would pass them by.

In some instances local beliefs and practices may actually have hampered villager attempts to exercise control over mortality. The common belief that dysentery could be ameliorated or prevented by drinking the muddied waters which collect beneath one's house can be seen as a particularly risky proposition. Similarly, the traditional practice of having post-partum women lay for up to 30 days before a hot roasting fire (yuu fai) appears at best a practice of dubious recuperative value.

The most dramatic alterations in village mortality conditions came about with the introduction of Western medicines. The earliest record of this welcomed input is left by the smallpox vaccination scars which some of the eldest villagers had received as children. As early as the second decade of this century government as well as private practitioners⁸ made their way to what was then an extremely remote community. These early vaccination efforts were neither well organized nor without cost to villagers,⁹ but overall they were effective. The lesson that modern medical practices could be extremely efficacious was not lost on villagers who saw the scourge of smallpox virtually disappear from their community.

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8. The story of early missionary efforts, as far back as the 1840s, to develop smallpox vaccines for use in Thailand has been told in an early Siam Society publication (Hight, 1914-1915). Their attempts to locally produce sufficient amounts of the vaccine and to win royal patronage for its distribution reached fruition in 1904. Village informants related that in addition to government vaccination teams, private medical entrepreneurs came periodically through the village vaccinating any villagers who could afford the price they asked for their services. Hight reports that by 1914 two million doses of smallpox vaccine had been produced and over three hundred thousand up-country villagers vaccinated in a special campaign conducted under royal sponsorship.
 9. Private practitioners were reported to charge as much as four baht per vaccination, a considerable amount some 50 years ago.

Government interest in public health programs was institutionalized with the 1888 establishment of the Medical Department. However, until after World War II few things were done that had an impact beyond Bangkok.¹⁰ Renamed the Ministry of Public Health in 1942, new impetus was given, especially with the encouragement provided by United Nations and United States funding in the post-War period, to efforts to spread public health programs throughout the countryside.

The first government clinic in the vicinity of Baan Tang Chang was established in 1935. Located in a regional administrative center some 15 kilometers from the study community, originally this clinic was staffed by a trained midwife and a government paramedic. In 1940 a provincial hospital manned by modern doctors¹¹ was established in the provincial town center about 35 kilometers from Baan Tang Chang. In 1947 a modern doctor was first assigned to the regional health clinic. Three years later in 1950 another hospital was founded at a distance of only 20 kilometers from the field site community.

In addition to these developments several second class health clinics have been established in the vicinity of Baan Tang Chang. Staffed by paramedics, sanitation officers, and occasionally government midwives, these facilities provide, at least theoretically, for local screening and referral of serious illnesses and treatment of minor ailments. Though a second class health clinic was not established in Baan Tang Chang until 1974, by that time there were other government clinics within an hour's walk of the community. For serious illness or injury modern transportation has brought the nearest hospital within an hour's distance of the community. In addition, it is not unknown for ailing villagers to be taken to modern hospitals in Bangkok, presently a half day's journey away.

10. Some researchers (e.g. Bryant, 1969: 77-79) maintain that the system of government health care in Thailand does not adequately serve the majority of the people, especially those in rural areas. Donaldson (1974) has provided an illuminating analysis of how the system developed that way. He focuses particularly upon early Rockefeller Foundation efforts to promote medical school development in Thailand and concludes that this resulted in the importation of an inappropriate Western-model medical delivery system.

11. The term 'modern doctor', is used to distinguish from 'traditional doctor' (see Riley and Sermsi, 1974) and means a doctor trained to the standards of Western medical practice. As Donaldson (1974: 6), notes the quality of medical training and practice in Thailand appears to be of a high standard.

Most early public health efforts attempting to reach into rural areas emanated from the provincial center. In the case of the study community this was a considerable distance away, especially before the road construction efforts of the 1960s. Even at present villagers complain that the reason they do not receive adequate government services is that the community is on the "tail of the province" (haang changwat). Nevertheless some public health programs did reach the community at a fairly early time. Around 1947 a program to regularly vaccinate villagers for smallpox, cholera, and typhoid was initiated. This program operated through the school with a call being put out for all villagers to congregate whenever a vaccination team arrived. After 1959 BCG (bacille Calmette-Guérin used as a vaccine against tuberculosis) was included in the school vaccination program.

As public health operations spread up-country in the post-War period, modern medical drugs became increasingly available. As was the earlier practice with smallpox vaccinations, many private practitioners found it profitable to bring these services directly to rural communities. From 1950 onwards 'injection doctors', self-taught or military-trained paramedics, filled a need for village level services. Not without occasional ill effects, they provided villagers with an array of potent antibiotic or not-so-potent vitamin extract injections.

Market town informants report that it is only within the last 20 years that fully stocked modern pharmacies have opened in this area. Prior to that time Chinese herbalists were the main distributors of over-the-counter medicines. With the modern druggist a whole array of medicines, from tranquillizers to powerful antibiotics, have been placed within easy, though not always inexpensive, reach of villagers. Pharmacists, who must be properly trained and licensed, often function as an additional type of local doctor administering to the ills of their customers.

Traditional doctors continue to practice in the contemporary community, but for the most part theirs is a dying art.¹² When members

12. As over 45 percent of all villagers reporting ever to have had a life threatening illness said they were treated by traditional doctors, these practices still occupy an important though declining place in local health care.

of the younger generation take up the practice of medicine, they usually look to the power of the injectibles and ignore the incantations and herbs of their fathers.¹³ While there is much overlap between the practice of modern medicine through private and government channels, a strict dichotomy exists between the traditional and modern forms. Because these issues are important components of the way villagers make decisions for medical care, we will return to them in a later chapter.

The power of Western medicine and modern medical practices are well-known and well-accepted by villagers. Women, who once would have died under the limited capabilities of local midwives, could now be rushed to nearby clinics and hospitabls. Infections becoming systemic and life threatening could now be effectively overcome by use of antibiotics. Regular medical examinations, especially as incorporated into a local school health program, provided the means to identify, treat, and ultimately prevent tuberculosis. For those who knew enough to seek proper care, the extreme agony of death from rabies or tetanus could now be avoided through modern medical treatment.

Though it was reported that quinine for treatment of malaria became available in nearby market towns at an earlier time, it was not until after World War II that modern medical drugs and practices began to have a significant impact on village mortality levels. Though obviously interrelated with other advances occurring at the same time, particularly those in transportation, education, communication, and agriculture, the increasing availability of Western medicines and the greater accessibility to modern health facilities and practioners are important factors responsible for rapid mortality decline in the post-War period. In Table V.4 crude death rates from genealogical survey data are presented along with national level estimates for the post-War period. Lower levels for the study community are likely the result of systematic omission for earlier periods of retrospective recall. Especially problematic was full recovery of infant and early childhood deaths. Otherwise, however, the trends of mortality decline indicated for Baan Tang Chang closely parallel the national level estimates.

13. Muecke (personal communication) reports, however, that in the Chiang Mai area young practioners were observed to be practicing some forms of traditional medicine.

Table V.4. Trends of Crude Deaths Rates from Genealogical Census
Data* and National Estimates**

Year	Baan Tang Chang	Thailand
1945	17.3	24.0
1946	16.9	23.2
1947	17.4	21.4
1948	17.0	17.3
1949	12.6	16.9
1950	13.7	15.9
1951	14.2	16.1
1952	13.7	14.1
1953	13.8	13.8
1954	14.3	13.9
1955	13.7	12.9
1956	14.0	13.2
1957	13.8	13.7
1958	14.1	12.5
1959	13.8	11.9
1960	13.4	12.2
1961	12.1	11.2
1962	12.5	11.3
1963	12.5	11.4
1964	11.5	10.9
1965	11.4	9.9
1966	11.9	10.3
1967	11.0	9.9
1968	11.4	9.7
1969	10.3	9.9
1970	10.7	8.8
1971	10.6	-
1972	10.8	-
1973	9.7	-
1974	9.6	-

* Crude Death Rates smoothed by five year moving average.

** Source: United Nations, 1976:220.

Genealogical data collected during field study also provides some substantiation of informant reports on cause of death in the community. While cause of death reports elicited in retrospective fashion from villagers must be viewed with some scepticism, clearly villagers possessed a general level of diagnostic skills that give this response some reliability. As data of this kind could be collected from no other source, a degree of inaccuracy is well tolerated.

During the genealogical census cause of death information was collected in an open-ended manner and coded according to general categories (e.g. fever, chronic illness) and sub-categories of specifically identified illnesses (e.g. malaria, tuberculosis). For many specific ailments villagers had well delineated terms (e.g. malaria (khay cap san), tuberculosis (wanarook), cholera (ahiwaa), smallpox (fiidat)). In Table V.5, the principal causes of death are listed as reported by villagers to have occurred over time. The data are presented by ten year periods as percentages of all cause of death reports. They are used to indicate relative mortality trends not specific levels of occurrence. More precise attention to mortality levels is given in Chapter VII.

Though of obviously deteriorating quality in periods prior to 40 years ago, cause of death reports show that substantial declines have occurred in the post-War period for several of the selected causes. While the apparent increase in infant mortality during the pre-War period is a product of systematic omission in these early years, the malaria increase may well reflect real conditions in the community. A 1950s malaria irradiation team reported that malaria was not endemic in Baan Tang Chang. This situation could have come about as a result of unintentional human intervention by way of clearing the swamps that previously provided vector mosquitoes with an ideal habitat. With the post-War increase in villager mobility, malaria levels increased.¹⁴ As reported by Howard et al., (1964:

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14. Villagers recalled a post-War incident which dramatically illustrates the susceptibility of village emigrants to malaria. In the 1940s the then Prime Minister, Pibul Songkhram, in a nationalistic fervour to recreate a monument to Thailand's traditional glory, decreed that a new national capital city should be constructed in the undeveloped interior site of Petchabun. To do so, labourers were conscripted from rural villages and put to work clearing the land. So high was the death toll from malaria that the project was abandoned. Several villagers were said to have been conscripted from Baan Tang Chang and surrounding villages. Some never returned; others had escaped to tell the story.

Table V.5. Selected Causes of Death from Genealogical Census Data
(As Percent of All Deaths by Period)

Period of Death	Non-Specific infant deaths	Maternal Mortality	Smallpox	Cholera	Tuberculosis	Malaria	Unknown	Other	Total
1877-1926 (2420-2469) *	17.8 (35) **	3.0 (6)	2.0 (4)	3.6 (7)	4.1 (8)	9.1 (18)	16.2 (32)	44.2 (87)	100.0 (197)
1927-1936 (2470-2479)	18.7 (29)	5.2 (8)	1.3 (2)	5.2 (8)	3.2 (5)	7.1 (11)	8.4 (13)	51.0 (79)	100.0 (155)
1937-1946 (2480-2489)	23.3 (57)	6.1 (15)	0.8 (2)	6.1 (15)	5.7 (14)	3.7 (9)	5.3 (13)	49.0 (120)	100.0 (245)
1947-1956 (2490-2499)	34.0 (82)	3.7 (9)	0.4 (1)	2.9 (7)	2.9 (7)	7.9 (19)	3.3 (8)	44.8 (108)	100.0 (241)
1957-1966 (2500-2509)	31.3 (80)	1.6 (4)	- -	2.0 (5)	3.5 (9)	7.8 (20)	3.1 (8)	50.8 (130)	100.0 (256)
1967-1976 (2510-2519)	18.3 (35)	1.6 (3)	- -	1.0 (2)	3.7 (7)	6.8 (13)	3.7 (7)	64.9 (124)	100.0 (191)
Total	24.7 (318)	3.5 (45)	0.7 (9)	3.4 (44)	3.9 (50)	7.0 (90)	6.3 (81)	50.4 (648)	100.0 (1285)

* (B.E.)

** (N).

66) the Central Plains has been relatively free of malaria except for that brought in from the outside.

The devastation once wrought by smallpox has been lost to antiquity. It occurred too long ago to be systematically recalled during the genealogical census. The reports of cholera however give some evidence of the epidemics that informants reported. In particular, cholera deaths peak to levels of about ten percent of all deaths in the years around 1935 and 1946 when epidemics were reported by informants to have occurred. The latter occurrence coincides with a crude death rate of 44 per thousand in 1946, the highest for any year of genealogical censusing.

Most interesting perhaps is the rapid decline in post-War levels of maternal mortality. Transportation to nearby hospital facilities was certainly a key factor in this decline. Coupled with the similarly steep decline in infant mortality, these changes in mortality alone produced changes in the population structure of the village. In the next section attention will be turned to an overview of fertility trends during this same period.

V.3 Traditional Trends and Recent Changes in Village Fertility

Villagers recognize that some of the same changes which have affected migration and mortality trends in their community have also had a decisive impact upon attitudes and practices concerning village fertility. Developments in transportation, communications, and education have, along with public health program expansion, altered traditional patterns of behaviour and encouraged villagers, as they express it, "to follow (modern) times" (dam samaai). This is perhaps no more evident than in contemporary village attitudes regarding ideal family size.

In a single open-ended question villagers were asked about their childbearing preferences. Their responses demonstrate overwhelming support for families of small and moderate size. From Table V.6 it can be seen that over half of the respondents preferred families within the two-to-four range. Further, preferences within this range were weighted more towards the lower end of the scale. Of 192 villagers who responded to the question with exact numbers, the most frequently stated preference (31.8%) was for the two-child family. The next most

Table V.6. Numbers of Children Desired* (in Percentages)

Sex	0-1	2-4	5+	Few	Many	Total
Male	5.0 (8)**	58.4 (94)	14.9 (24)	13.0 (21)	8.7 (14)	100.0 (161)
Female	7.2 (15)	44.4 (92)	11.1 (23)	20.8 (43)	16.4 (34)	100.0 (207)
Total	6.3 (23)	50.5 (186)	12.8 (47)	17.4 (64)	13.0 (48)	100.0 (368)

* An additional 451 out of the total 819 villagers asked this open-ended question gave other than numerical responses to this question. Of these 34 percent, mostly unmarried females, said that they had never thought about it. Another 34 percent responded that the number of children they already had was enough. The remainder were almost equally distributed among those not understanding the question, not knowing, or giving an ambivalent response. All of these responses have been excluded from the above table.

** (N).

Table V.7. Crude Birth Rates from Genealogical Census Data Averaged over Ten Year Periods

Period (A.D.)	Total Births	Crude Birth Rate	Period (B.E.)
1907-1916	264	38.1	2450-2459
1917-1926	362	35.7	2460-2469
1927-1936	462	34.8	2470-2479
1937-1946	494	31.1	2480-2489
1947-1956	641	35.3	2490-2499
1957-1966	770	37.8	2500-2509
1967-1976	458	23.8	2510-2519

frequent (19.8%) was for families of either two or three children.

Numerous conversations and several in-depth interviews with villagers substantiate the general reliability of these figures. However, as attested by frequent program failures to reach KAP-based family planning targets, low family size desires are not necessarily reliable predictions of fertility behaviour. To more carefully evaluate what these contemporary village expressions for small family size mean, an attempt is made in this section to view community fertility attitudes and practices from an historical perspective.

In Table V.7 crude birth rates averaged over ten year periods from genealogical data are presented. However, some cautionary notes on the reliability of rates calculated from retrospective genealogies must at this point be interjected. McArthur (1961: 130) has stated that genealogies are likely to be biased toward high fertility - those surviving to recall their ancestors are more likely to come from larger than smaller families. In contrast, systematic omission of infant and early childhood mortality has produced the counter result of undercounting the actual number of births that occurred. The results of these contrary sources of error on rates computed from genealogical survey data will be thoroughly discussed in the next chapter. In this section the data are presented only to provide some indication of fertility trends in Baan Tang Chang.

Fertility decline in the genealogical data to low levels in the Depression and War years of the 1930s and early 1940s and subsequent return to higher levels in the post-War period is intriguing precisely because this so well corresponds with world-wide trends. Similarly, the rapid declines indicated in the most recent period parallel the increasing availability to villagers of modern contraceptive techniques. Whether these trends accurately reflected actual occurrences in village fertility or are merely fortuitous artifacts of genealogical data will be thoroughly discussed in the following two chapters. In the remainder of this chapter we will concentrate upon the traditional patterns and recent changes in village life which have implications for fertility attitudes and practices.

It is obvious to most villagers that fewer infants and small children die now than in the past. They recognize, however, that this has not come about cost-free. Rather, almost all village parents claimed to spend substantial sums of money on medicines and treatments to keep their

children well. Equally important is their awareness that the modern medicines now available also include contraceptive techniques which give villagers an effective and safe means to limit the number of children they have. Several of the older village women stated that they had themselves had large families because they had "lacked the means to control fertility" (may mi witii khum kannert). They contrasted their situation with that of younger women today.

Though villagers articulated fairly well the costs and benefits of raising children in the present time, they did not have as clear an understanding of how changes in village life over time had altered the cost-benefit components of child rearing. While many villagers knew, for example, that increased schooling meant that children did less work around the house and in the rice fields, they did not make the more difficult connection between advances in agricultural technology and resultant declines in the utility of child labour.¹⁵

In the past, the village economy was much closer to a subsistent and self-sufficient level than it is at present. Within the memory of some villagers neither labour nor goods were bought or sold. Rather, everything was exchanged. Even the rice merchant making his annual visit to the area dealt originally on a barter basis, exchanging goods which villagers did not make themselves, such as the metal tools of farmwork, for the rice that villagers had grown. Each household, from weaving cloth for clothes to gathering firewood for cooking, from making twine for fishnets to rearing buffalo for working the fields, was largely self-sufficient. In this situation a tremendous amount of manual labour had to be done to keep each household functioning. In consequence, each new birth was a welcomed addition to the household labour force.

Villagers are unanimous in the opinion that children in the past worked much harder and from a much younger age than they do today. Compulsory school attendance, enacted by law almost 50 years ago, though not actually achieved in this community until the last 20 years,¹⁶ is

15. If the question were directly put, as in a survey questionnaire, many villagers would undoubtedly affirm such connections. However, my purpose in this aspect of research was to elicit from villagers what they understood of the factors underlying fertility and not to lead them to confirm what I understood.
16. The government school was established in Baan Tang Chang in 1928. However, it was not until the 1950s that school registers showed enrollments roughly equal to the number of children living in the community. In particular, following the tradition of male children being sent to the wat for education, boys were much more likely to attend school in the early period than girls.

partly responsible for the change. However, of even greater significance are the technological changes which have occurred in agricultural production and the general monetization of the village economy.

Replacement of water buffaloes by tractors began 25 years ago and still continues today. In 1950 no villagers owned tractors, though a few, 1.2 percent of the 322 villagers who reported ever having farmed the land,¹⁷ had already through rental arrangements made use of tractors on a part-time basis. In 1976 eight percent of village families owned tractors, and the farmers who had ever used them had increased to 71.4 percent.¹⁸ During the field study year only one-third of village households still possessed water buffalo, and the tendency was definitely towards selling off these beasts who were once the primary mainstay of village farm labour.

Tractors, both owned and rented, have thus freed many households of one need for utilizing significant amounts of children's labour.¹⁹ The endless hours that children, usually young boys, once spent tending family buffalo are obviated when the traditional beast of burden is replaced by the modern "iron buffalo" (lek kwaai). In addition, the versatility of tractors, used during every phase of rice cultivation from plowing fields to pulling cart loads of harvested rice bundles to providing mechanical power for threshing and winnowing the rice grains, has greatly reduced the yearly workload of most households. While village adults recall the long hours they had to work as children alongside their parents during the months of harvest, today children are largely left free to play while their parents do the same amount of work in a shorter time.

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17. Wives of rice farmers who never farmed independently of their husbands and children who have never farmed independently of their parents are not included in this 322 total.
 18. Renting tractors to families who do not own them has become a substantial source of income for several village families.
 19. Several farmers noted that tractor ownership removes the threat of their buffalo being rustled and sold for slaughter, a perennial village problem. However, it is becoming clear that as the technology advances rustlers merely shift gears and become modernized in their own way. The threat of tractors being stolen is a growing problem in the study area.

Other technological advances have similarly reduced the need for child labour. The widespread use of pesticides and herbicides for example, has eliminated the constant chores of pulling weeds and catching crabs which could plague a rice crop. In the past children often adeptly shared these tasks with their elders. Similarly, the construction of rice mills in nearby market towns has saved young girls the chore of hand pounding in mortars sufficient rice for daily consumption.²⁰

Full entry into the money economy has further reduced demands upon household labour. Clothes once made by hand are now bought. Cooking fires which once burned wood collected from nearby forests now burn charcoal purchased from nearby factories. Roofing materials, once made of gathered thatch, are now mostly sheets of corrugated metal purchased at the local market. The roles that children formerly played in these various household production activities have now disappeared.

For all these advances, however, life in a village household still requires significant labour output. Farming in contemporary conditions, especially as some fields are now double-cropped for rice and a few others planted in off-season corn, involves a great deal of tiresome and tiring work. Similarly, daily household chores demand a tremendous amount of energy - cooking consumes many hours each day, water must be carried in buckets, laundry is done by hand. There is still, therefore, room for children to make work contributions. For the most part, however, at least while they remain in school, the burdens of household labour are carried by their parents and other adolescent or adult relatives in the household.

Once children complete the four years (soon to be six) of compulsory schooling, usually at the age of 11 or 12, they contribute more fully to household labours. However, increasingly large numbers, though particularly boys, leave the village to continue their education elsewhere. Typically, once educated to higher levels they rarely return to the life of a village farmer. Even during school vacations they will be unlikely to assist their parents in the fields. For the majority who do not go on to

20. Though pounding was frequently done by hand, the most common method for pounding rice in this area was to use a foot treadle device.

higher education, seasonal or permanent wage labour elsewhere is often a more attractive alternative than remaining in the family household. In addition, post-school adolescents are often hired for wage labour jobs in the village for which they are usually paid at full adult wage levels.

Children passing through their adolescent years who are able to earn wages will usually contribute to household income. If they are working in the village they are likely to give all their earnings to their parents. If they are working away from the village they will often send a substantial proportion back to their parents in the village. Remittances will usually be made as long as children remain single. Once they have a family of their own it is unlikely and unexpected that they can continue this regular support. However, as the youngest daughter often remains at home with her parents, with her husband if she marries, the long term security prospects of parents are usually taken care of.

Because of the wage earning capacity of adolescents, there exists much ambivalence among villagers about the costs and benefits of children in modern times. Clearly, small children are a financial burden upon their families. Not only are they an additional mouth to feed, a considerable hardship for the nearly 50 percent of villagers who are landless, but they also incur relatively great amounts of other costs as well. A principal cost, most parents agreed, is in medical expenses - small children often suffer from one affliction or another frequently requiring the services of the local injection doctor or a trip to a nearby pharmacy or clinic. Additionally, though education is ostensibly free, there are always school uniforms and supplies to be bought. For those supporting children through the upper grades, which must be attended outside the village, the costs for education are particularly high.

On the other hand, once through early childhood and the school years, adolescent children may make substantial contributions to household income. As some village men having a discussion at the wat succinctly put it: it is good to have many children for they can be wage labourers and give money to their parents.

Many villagers clearly articulated this ambivalence about the costs and benefits of having children: raising small children we must "care for" (liang) them; when they are older they will liang us. But if having children is then a kind of investment in the future, there are

definite limitations. The more one invests in children, as in providing support for higher education, the greater delay will there be in receiving some return. Once children marry it is recognized that their primary responsibilities will turn to their own families. Even in old age parents cannot be sure that children will honour their obligations. Villagers realize that their own children, like all human beings, are essentially unpredictable (see Phillips 1965: 83-86). No parent is assured that even his own children will faithfully reciprocate what they were once given.

There are, of course, factors other than just these cost-benefit ones involved. Villagers demonstrated great enjoyment of the affectionate ties between parents and young children and often stated that one of the best qualities of the Thai people is the great amount of love that parents give to their children. However, the availability of modern contraceptives provide women with an alternative to the physical burdens of child bearing and rearing. The most often voiced statement of women who wanted no more children was that they were simply "tired of raising children" (bua liang luuk).

In that some traditional means have always been available to villagers to control births, family planning is not new to the village. There were, for example, monks with special powers whom barren couples consulted to allow them to have children. On the other hand, certain herbal potions and "pressing" (reet) techniques were employed traditionally as abortifacients. These were apparently used, however, only in cases of exceptional need.²¹ Because these traditional methods were very dangerous and painful, women in normal situations would rarely seek to terminate a pregnancy.²² More importantly because children in the past were far more a blessing than a burden there was little need to limit births.

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21. Rare occurrences of incest occurring in the community, revealed in confidence by close friends, could, one suspects, have created such occasions of exceptional need. Otherwise, pregnancy outside of wedlock is not too greatly stigmatized. Rather, recognition that a sexual liaison has occurred is usually tantamount to acceptance of marital union as an already established fact.
22. Researchers in Northern Thailand (e.g. Mougne, forthcoming; Wijeyewardene, n.d.: 5) indicate that a relatively high incidence of abortion existed in the communities they studied.

In the present children remain a blessing but one that is not without considerable cost. In consequence, increasing numbers of villagers - presently more than one-third of married women between the ages of 18 and 49 - have practiced modern contraception. The alacrity with which they have done so as well as the effectiveness of their efforts are issues taken up in subsequent chapters of this study.

V.4 Summary and Conclusions

In this chapter community population trends in migration, mortality and fertility were outlined over the 130 year period between early village settlement and the present. Qualitative data collected from field site informants provided the primary source of information, while quantitative data from surveys conducted during field study were presented as supportive evidence. Within this overview of population trends, specific attention was given to modern developments which have affected demographic change in the community. Particular emphasis was placed upon the post-World War II period of economic expansion. The many regional and local developments which resulted in, for example, improvements in transportation, public health, and agriculture, had considerable impact upon demographic patterns in Baan Tang Chang.

To summarize and conclude this chapter total population figures and rates of natural increase and net migration computed from village genealogies are briefly examined. Figure V.1 shows that consistent and persistent population growth has occurred throughout most of Baan Tang Chang's history. The different dimensions of population growth outlined in Figure V.2 may be viewed for general compatibility with what villagers reported about this area.

In its early years on the far edge of established Thai communities population growth was fueled at least in part by high levels of in-migration. Stories which villagers recalled of this period of early settlement accord well with genealogical reports of high in-migration. As the frontier gave way and an established community emerged, in-migration appears to have declined to levels which were generally balanced by out-migration. Migrants during the decades prior to World War II were for the most part short distance movers taking up residence in the nearby homes of their spouses. Net migration levels through these early periods are however affected by the likelihood that recall bias favoured more

Figure V.1. Population Growth in Baan Tang Chang

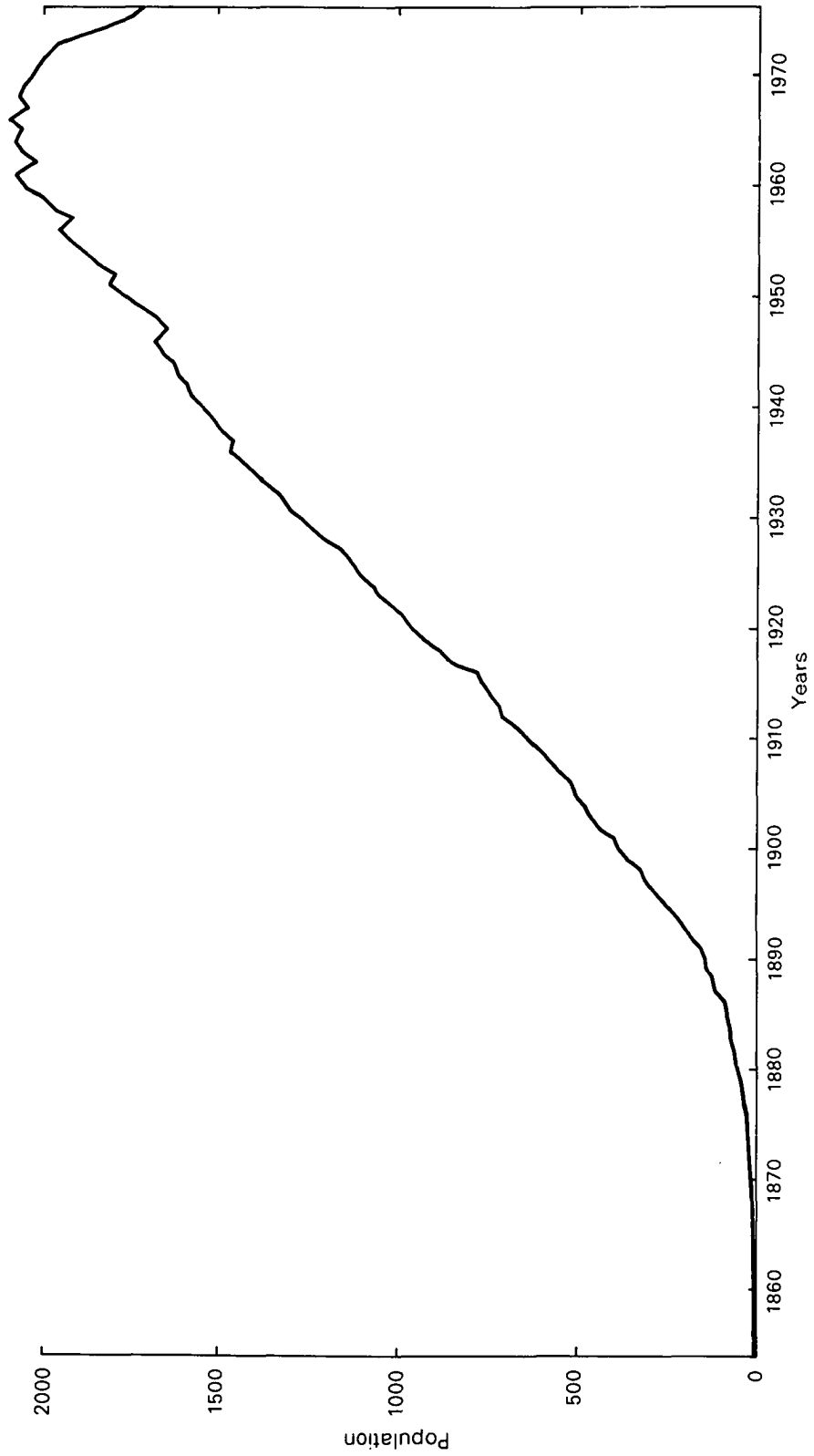
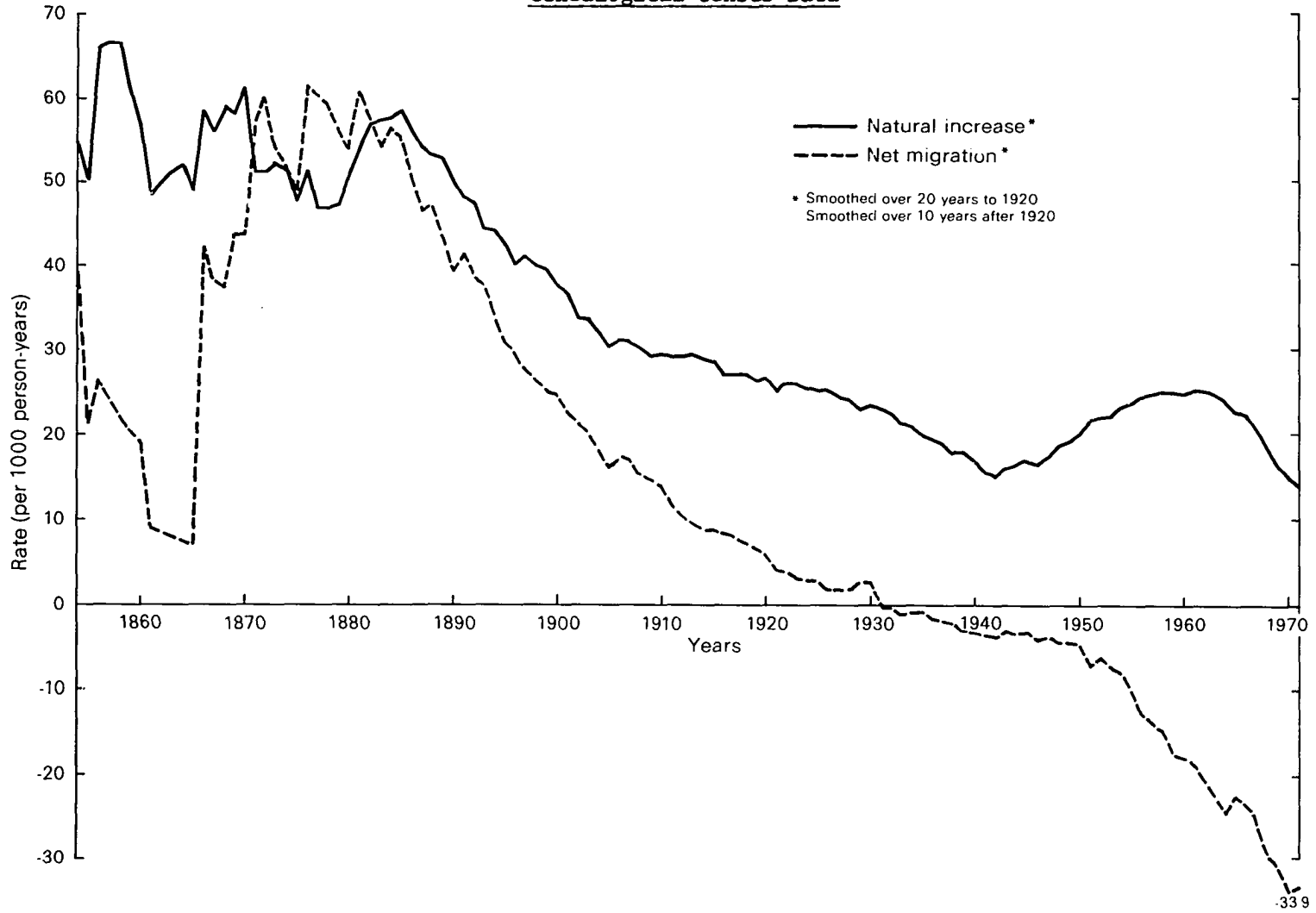


Figure V.2. Rates of Natural Increase and Net Migration for Baan Tang Chang from Genealogical Census Data



complete recovery of in- over out-migrants.

Extremely low levels of mortality computed through the first fifty years of genealogical censusing are most at variance with what informants recalled of village population trends. The heavy tolls of epidemics, crop shortfalls, and a variety of other illnesses and difficulties have all been lost in genealogical computations to the antiquity of their occurrences. As with omission of out-migrants, failure to completely recover deaths results in population underenumeration. One consequence is that genealogical fertility rates through this early period are inflated to higher levels than actually occurred. Another possible source of fertility inflation is that those born into larger families are most likely to have survived to report the genealogical histories of their ancestors. Thus computed rates of natural increase through much of the early period of genealogical censusing are likely to be higher than actual levels.

Systematic omission of infant and early childhood mortality is also likely to have occurred throughout the early period of genealogical recall. In this case, however, the errors are compensating - omission of an infant death was accompanied by the omission of its birth. With more complete recovery of events occurring in recent decades, the rates of natural increase from about 1940 onwards may well approximate levels of actual occurrence.

After World War II genealogical rates show a trend that accords with informants reports. Improvements in health care and transportation are primary factors responsible for mortality decline from past to present. A similar consistency between genealogical data and qualitative evidence may be noted for fertility increases occurring between the end of World War II and 1960. The same factors instrumental in bringing about mortality decline would operate to decrease sub-fecundity and sterility, as well as to promote longer survival in marital unions.

Resultant levels of high natural increase in the post-War period have been counter balanced by increases in out-migration. As population pressure upon limited village resources built up, outlets were provided by expanding economic opportunities outside the village. Increasing numbers of out-migrants during this time moved to areas that were distant from the village.

The population growth that was sustained in the community through a century of community history came to an end in the mid-1960s. Continual increases in the levels of out-migration and fertility decline in the last decade have decreased community population from its peak of 2092 in 1966 to its 1976 population of 1718.

In the overview of village population trends presented above the difficulties presented in using retrospective genealogies to reconstruct population history are readily apparent. Serious questions of data reliability and representativeness must be raised, especially as the data stretches further into the past. In this chapter genealogical data have been used only in a supportive role to a more qualitative view of village population history. In the next chapter genealogical data will be used in a more forthright attempt to reconstruct village demographic history.

CHAPTER VI

A DEMOGRAPHIC HISTORY OF BAAN TANG CHANG:
 PROBLEMS AND PROSPECTS IN THE USE OF RETROSPECTIVE GENEALOGIES

Microscopic problems of historical research can and should be made macroscopic - capable of reflecting worlds larger than themselves. It is in this flicker of truth, the revelations of the general in the particular, that the contribution of the historical method to social science will be found.

- Postan, "The Historical Method in Social Science: An Inaugural Lecture"

Two seminal questions are raised at the outset and answered during the course of this and the following chapter:

- 1) How good are the genealogical data?
- 2) What do they reveal about demographic history in the study community?

These questions are viewed as complementary. In consequence, there is in these chapters considerable interplay between two separate approaches: on the one hand viewing the data for what they reveal about the use of genealogies in reconstructing demographic history, and on the other, presenting the data for what they reveal about actual demographic occurrence in Baan Tang Chang.

VI.1 Error, Omission, and Bias in Genealogical Censusing

As a part of field study, extensive interviews with community residents were conducted to trace family genealogies.¹ Ideally, these genealogies include all individuals who had ever lived in Baan Tang Chang. For each individual recovered in this genealogical census the demographic events of birth, in-migration, out-migration, and death were reviewed so that dates of occurrence could be assigned. In addition, each demographic event was linked to a place of occurrence, and in the case of death, a cause

1. The procedures employed were presented in Chapter III and reviewed in greater detail in Appendix A.

of occurrence. In total, information was recorded for 4,958 villagers² who have ever lived in Baan Tang Chang.

The retrospective collection of demographic events by tracing genealogies was a difficult undertaking. Respondents were asked to report not only on their own life experiences but also on those of their kinsmen, from many of whom they were two generations or more removed. It was necessary, for example, to rely upon respondent memories to uncover the details of specific demographic events, such as the place and date of occurrence, which had occurred many years in the past. In addition, entire families moved away or died off leaving no relatives to recall their existence, let alone to provide details of their demographic history. This raises the spectre of systematic bias in the genealogical approach to which McArthur (1961: 130) has drawn explicit attention:

"Estimates of fertility, for example, which might be derived from the analysis of genealogies stretching back through several generations are apt to be biased because the women of older generations who had large numbers of children are more likely to have descendants amongst the present day informants than are those who had few, and childless women in early generations are likely to be forgotten completely".

In this section attention is given to such difficulties and the extent to which they have affected data collected in Baan Tang Chang.

VI.1.1 Errors in Genealogical Censusing

Demographic analysis is conducted primarily within a time-age framework. In areas where educational levels are low and written records few and often unreliable, reliance upon respondent recall to date demographic events occurring in the past is particularly problematic. However, the genealogical method itself in combination with the temporal orientation of Thai society greatly ameliorated this potential difficulty.

Kinship linkages themselves provide a hedge against error in dating demographic events through genealogical recall. In the genealogical census, efforts to date the occurrence of demographic events were anchored

2. The census originally collected information on 4,971 villagers. However, for subsequent computer tabulations 13 records were dropped from the data set because they lacked essential information.

in kinship structures.³ Interviews always proceeded from present to past, from events and individuals most easily recalled to those more difficult. This provided an expanding calendar of events unique to each family. Subsequently reported events could be located in reference to events that had already been placed within particular family trees.

Interviewers developed practiced skill at eliciting and/or estimating dates for events which respondents could not themselves precisely recall. By using what was already known about a family's past, interviewers could determine in relative fashion when the next reported event occurred. For example, dating the death of a man named Yuak could lead to the following line of questioning: Did Song's father, Yuak, die before Song married Chamrong and moved to Bangkok? etc. Relative positioning of demographic events within genealogical structures was an effective means to improve temporal recall.

This approach to dating the occurrence of events was supplemented by referral to a calendar developed from important dates in local history (see Scott and Sabaugh, 1970). Such occurrences as a year of great floods in 1918, a fire which burned down an entire hamlet in 1925, the coup of 1932 when the absolute monarchy in Thailand was overthrown (causing in this community a panicky flight to the rural hinterlands), and the end of World War II, were used as reference points to help villagers date specific demographic events in the past. A few of the oldest villagers even remembered seeing in 1910 Haley's comet in their skies.

The Thai fondness for astrological beliefs and attachment to the twelve-year animal cycle of Chinese origin assured a highly accurate base for reckoning birth dates of family members. A replication of the animal year chart that was developed for use by survey teams is presented in Figure VI.1. When reporting a family member's birth year, respondents usually named one of the twelve animal years. Often they could also identify how many twelve-year cycles (roop) ago the birth had occurred. Thus, the

3. That kinship in Central Plains village society is not utilized for corporate group organization does not mean that villagers are unaware of the kinship ties that permeate their community. Regardless of its functional utility, knowledge of who is related to whom is basic to village life. Like people everywhere, Thai villagers were both flattered and eager to talk of the particular lineages of which they are a part.

Figure VI.1. Twelve Year Animal Cycle Chart

RAT	COW	TIGER	RABBIT	DRAGON	SNAKE	HORSE	GOAT	MONKEY	CHICKEN	DOG	PIG
2419* 100**	2420 99	2421 98	2422 97	2423 96	2424 95	2425 94	2426 93	2427 92	2428 91	2429 90	2430 89
2431 88	2432 87	2433 86	2434 85	2435 84	2436 83	2437 82	2438 81	2439 80	2440 79	2441 78	2442 77
2443 76	2444 75	2445 74	2446 73	2447 72	2448 71	2449 70	2450 69	2451 68	2452 67	2453 66	2454 65
2455 64	2456 63	2457 62	2458 61	2459 60	2460 59	2461 58	2462 57	2463 56	2464 55	2465 54	2466 53
2467 52	2468 51	2469 50	2470 49	2471 48	2472 47	2473 46	2474 45	2475 44	2476 43	2477 42	2478 41
2479 40	2480 39	2481 38	2482 37	2483 36	2484 35	2485 34	2486 33	2487 32	2488 31	2489 30	2490 29
2491 28	2492 27	2493 26	2494 25	2495 24	2496 23	2497 22	2498 21	2499 20	2500 19	2501 18	2502 17
2503 16	2504 15	2505 14	2506 13	2507 12	2508 11	2509 10	2510 9	2511 8	2512 7	2513 6	2514 5
2515 4	2516 3	2517 2	2518 1	2519							

* B.E. Year

** Number of years before field study year (2519 B.E.)

interviewer by referring to the chart could determine the particular year in which a birth occurred. When respondents were also able to name an exact Buddhist Era year, the chart was referred to as a check. All birth dates were always further checked against other events, particularly the birth dates of siblings and parents.

Informants report that except for there being some basis for affinity between people born in the same animal year, there is no special value attached to being born in one year or another. Table VI.1 presents the distribution of birth dates reported by animal year within four periods of genealogical censusing. In general the frequencies are not significantly different from the 8.33 percent mean that would be expected for a perfectly even distribution and no particular preference patterns can be seen to emerge from reports over the entire 131 year period. The nearer to the present a villager was born the more likely was his birth date to be reported in the animal year system.

Accuracy in recording birth dates received a boost from an additional feature of Thai society: the protocol of social relationships stresses an age-ordered status hierarchy. This is particularly true within sib groups, but is also applied generally to all people with whom an individual has close social contact. Instead of calling others or himself by name or pronoun, a person often uses the word for "older" (phii) or "younger" (nong). Most characteristic of conversations between people who have just met is the attempt to establish relative status positions by finding out who is phii and who is nong. Thus, being attuned to relative age rankings, villagers were able to report sib and other orderings with high accuracy. In consequence, interviewers could by relative placement assign birth dates to many individuals whose actual animal year or B.E. birth years were not directly reported.

Given this proclivity for animal year reporting, digital or other preferences in age reporting were minimized. Analysis of national data demonstrates that this is a general characteristic of Thai population data (Ueda, 1976: 51). Age heaping would be evidenced by significant clusterings of births in a pattern array from period to period, such as at five or ten year intervals. For dates reckoned in Buddhist Era time, years ending with the digits '4' and '9' are multiples of five away from the field study year 2519 B.E. (1976). As Table VI.2 shows, digital heaping happened only slightly

Table VI.1. Birth Dates Reported by Twelve-Year Animal Cycle as Percentages of Total Animal Year Reports and Total Reports for Selected Periods

Year of Birth A.D.	Animal Year Reports												Total Animal Year Reports	Total Animal Year Un- reported	Total	Year of Birth B.E.
	1	2	3	4	5	6	7	8	9	10	11	12				
1825- 1886	6.8 (5)*	4.1 (3)	20.5 (15)	11.0 (8)	5.5 (4)	2.7 (2)	11.0 (8)	9.6 (7)	6.8 (5)	9.6 (7)	9.6 (7)	2.7 (2)	100.0 (73)	78.5 (266)	100.0 (339)	2369- 2429
1887- 1916	5.7 (27)	11.4 (54)	12.4 (59)	7.2 (34)	16.9 (80)	4.6 (22)	3.8 (18)	8.9 (42)	5.5 (26)	7.4 (35)	6.1 (29)	10.1 (48)	100.0 (474)	47.2 (424)	100.0 (898)	2430- 2459
1917- 1946	7.4 (86)	7.1 (82)	6.4 (74)	7.5 (87)	6.5 (76)	9.5 (110)	10.5 (122)	8.5 (99)	10.1 (117)	10.1 (118)	9.6 (112)	6.9 (80)	100.0 (1163)	30.2 (502)	100.0 (1665)	2460- 2489
1947- 1976	9.4 (154)	8.7 (143)	8.7 (143)	8.9 (147)	9.8 (162)	8.0 (131)	7.3 (120)	7.5 (123)	7.3 (120)	7.4 (121)	7.2 (118)	10.0 (164)	100.0 (1646)	19.9 (409)	100.0 (2055)	2490- 2519
Total	8.1 (272)	8.4 (282)	8.7 (291)	8.2 (276)	9.6 (322)	7.9 (265)	8.0 (268)	8.1 (271)	8.0 (268)	8.4 (281)	7.9 (266)	8.8 (294)	100.0 (3356)	32.3 (1601)	100.0 (4957)**	Total

* (N).

** Excludes fourteen individuals recovered during genealogical censusing for whom neither birth dates nor animal years were reported.

Table VI.2. Digital Birth Year Percentage Distribution by Animal Year Reports from Genealogical Census Data

<u>Birth Year Last Digit of Reported/ Estimated B.E. Year</u>	<u>Animal Year Reported</u>	<u>Animal Year Not Reported</u>	<u>Total</u>
1	9.8 (328)*	10.3 (165)	9.9 (493)
2	10.1 (338)	8.8 (141)	9.7 (479)
3	9.9 (332)	8.7 (140)	9.5 (472)
4	9.8 (328)	14.0 (225)	11.2 (553)
5	10.2 (342)	8.6 (138)	9.7 (480)
6	9.5 (319)	9.3 (150)	9.5 (469)
7	9.3 (313)	9.7 (156)	9.5 (469)
8	9.9 (332)	7.4 (119)	9.1 (451)
9	11.0 (369)	16.6 (266)	12.8 (635)
0	10.5 (351)	6.7 (107)	9.2 (458)
Total	100.0 (3352)	100.0 (1607)	100.0 (4959)

* (N).

for those whose birth dates were reported by animal year. For those whose birth dates were reported directly or estimated without benefit of an animal year checkpoint, heaping patterns are more evident. The overall picture, however, is that age heaping is apparent only at the very earliest periods for which individuals were recovered.

In contrast to births, respondents were not as able to immediately recall the exact years in which family members had migrated or died. However, age at occurrence could usually be provided or estimated, then easily converted into a year of occurrence. Again, family trees anchored in the accuracy of birth year reports provided a firm chronological basis for estimating the timing of demographic events. In addition, interviewers were also able to use the local history dateline in making estimates of occurrence. Nevertheless, as would be expected and as is shown in Tables VI.3 and VI.4, some amounts of age and chronology heaping have occurred in reporting events of death and migration.

The severity of this problem is greater in the earlier period. Within the broader analytic purposes of this dissertation, however, some amount of age and date misstatement is well tolerated. Though short-term periodic fluctuations will not be entirely ignored, the more important consideration is to document general patterns of demographic occurrence. The combined use of animal year birth reports, family tree chronology, and a local history dateline assured that a high level of general accuracy was achieved in dating events recovered through genealogical censusing. To smooth the minor errors that have inevitably occurred, rates of demographic occurrence may be averaged over periods of several years.

VI.1.2 Data Omission

The genealogical framework effectively minimized the amount of omission occurring within census reports of particular individuals. When dates of occurrence were not known, they could usually be estimated within the context of other family members. At the conclusion of the census only 14 dates of birth (0.3 percent) and 73 dates of death (1.5 percent) were listed as unknown. Omission of migration dates was only slightly different - 64 dates of in-migration (1.3 percent) and 21 dates of out-migration (0.4 percent) were reported as unknown. In most cases these unknown dates resulted from initial reluctance to affix a specific year to events which

Table VI.3. In-Migration, Out-Migration, and Death Reports from Genealogical Census Data by Year of Occurrence

Year of Occurrence (Last Digit only)	Events Occurring Prior to 1927 (2470)					
	In-Migration		Out-Migration		Death	
	N	%	N	%	N	%
1	48	10.1	6	6.7	9	4.1
2	26	5.5	3	3.4	15	6.9
3	25	5.3	3	3.4	13	6.0
4	91	19.2	7	7.9	25	11.5
5	29	6.1	5	5.6	15	6.9
6	28	5.9	19	21.3	19	8.7
7	39	8.2	9	10.1	20	9.2
8	23	4.8	5	5.6	18	8.3
9	45	30.5	29	32.6	73	33.5
0	21	4.4	3	3.4	11	5.0

Year of Occurrence (Last Digit only)	Events Occurring After 1927 (2470)					
	In-Migration		Out-Migration		Death	
	N	%	N	%	N	%
1	66	9.5	131	6.5	117	8.8
2	56	8.1	132	6.5	117	8.8
3	56	8.1	151	7.4	98	7.3
4	105	15.1	310	15.3	200	15.0
5	52	7.5	142	7.0	109	8.2
6	55	7.9	257	12.7	109	8.2
7	102	14.7	274	13.5	140	10.5
8	45	6.5	135	6.7	95	7.1
9	108	15.6	430	21.2	270	20.2
0	49	7.1	65	3.2	79	5.9

Table VI.4. In-Migration, Out-Migration, and Death Reports from Genealogical Census Data by Age at Time of Occurrence

Age at Time of Occurrence (Last Digit only)	Events Occurring Prior to 1927 (2470)					
	In-Migration		Out-Migration		Death	
	N	%	N	%	N	%
1	35	7.4	2	2.2	17	9.9
2	44	9.3	13	14.6	15	8.7
3	56	11.8	13	14.6	14	8.2
4	44	9.3	7	7.9	18	10.5
5	77	16.2	18	20.2	26	15.2
6	37	7.8	9	10.1	18	10.5
7	38	8.0	8	9.0	11	6.4
8	30	6.3	8	9.0	12	7.0
9	34	7.1	3	3.4	11	6.4
0	80	16.8	8	9.0	29	17.0

Age at Time of Occurrence (Last Digit only)	Events Occurring During or After 1927 (2470)					
	In-Migration		Out-Migration		Death*	
	N	%	N	%	N	%
1	79	11.4	228	11.3	114	11.8
2	87	12.6	226	11.2	99	10.3
3	72	10.4	233	11.5	77	8.0
4	69	10.0	202	9.8	84	8.7
5	74	10.7	220	10.9	119	12.4
6	48	6.9	183	9.0	78	8.1
7	65	9.4	160	7.9	104	10.8
8	63	9.1	208	10.3	80	8.3
9	54	7.8	154	7.6	70	7.3
0	81	11.7	212	10.5	138	14.3

* Because zero digit mortality would be inflated by high level infant mortality, deaths occurring during the first year of life (i.e. at age zero) are not included on this table.

had happened many decades previously. So that the records of these events would not be dropped from analysis, in almost all cases rough estimates could be made prior to making final tabulations. Because there was no reliable basis upon which to make even rough estimates for some individuals recovered in the census, 13 records had to be omitted from the data set.

While the genealogical approach provides a means for stimulating respondent recall, all census items could not always be recovered for all individuals. Of the total 4,971 individuals for whom information was originally collected, only 2.4 percent had unknown places of birth and 1.4 percent unknown places of usual residence. The number of siblings that individuals had was unreported in 2.4 percent of cases. Of the 1,567 reported to have died, place of death was unknown for 2.8 percent and cause of death was reported as unknown for 10.5 percent. The further removed from the present the more likely were such items of information to be omitted.

More serious than the omission of particular items of information for individuals is the likelihood that substantial numbers of individuals, and indeed, entire families, were not recovered through the genealogical approach. In response to the census, Tang Chang villagers traced their origins in the community through as many as six generations. Of 344 matrilineal stem families⁴ recovered during the census, 20.9 percent had lived in the community for three generations, 15.1 percent for four, 6.1 percent for five, and 1.2 percent for six generations. The remaining 195 stem families had only one (8.7 percent) or two (48.0 percent) generations' experience in the community. While most of these one and two generation families owed their relatively short periods of residential duration to recent entry into Baan Tang Chang, for fully 15.4 percent of these families residence in the community was initiated more than seventy years ago. Clearly most of these families no longer have surviving relatives among the contemporary residents of Baan Tang Chang. How many others may also have lived previously in the study community but were not recovered during the census is the subject of the remainder of this section.

4. Because of the tendency towards matrilocality in the Central Plains, Hackenberg's (1967) genealogical coding system was applied to the data matrilineally. Though identification numbers for individual records were recorded by matrilineal lines, in the actual conduct of the census, lineages were traced bi-laterally, that is through both mother's and father's sides. For further details see Appendix A.

VI.1.3 Omission and Bias in Genealogical Censusing

While the genealogical approach provides a unique context within which related individuals and corresponding demographic events may be traced and temporally located, not all individuals who have ever lived in the community are located within the lineages of contemporary residents. Through more than a century of community history, a number of families have simply failed to produce sufficient offspring, have moved off entirely to other places, or have died off without leaving descendants in the study community. Of the 344 stem families identified, only 61.9 percent were traced directly from matrilineal descendants still resident in the community. Members of the remaining 131 families were recovered through other means. In particular, data sources other than the memories of surviving relatives were employed to support and supplement the genealogical approach.

Genealogical censusing does not need to rely solely upon recall elicited from resident descendants. For most areas of the world some written records are likely to exist that may be of assistance in reconstructing demographic history. Though the accuracy and completeness of such records may be questionable, even mere lists of names may help the researcher recover individuals and families that would otherwise be missed. Contemporary informants may be used to check such lists and may either themselves be able to provide additional information or direct the researcher to community residents who can.

In Baan Tang Chang written records of several kinds were available. Among these were household registration lists dating from more than 20 years ago and school enrollment lists dating from 1928. Copies of these were made, informants consulted, and when possible census interviews with surviving relatives or other knowledgeable villagers conducted.

During censusing, an attempt was made to use the household registration lists to assure that at least for the last 30 years all previous household residents would be recorded in the census. However, it was found that the household registers were often in serious error with what villagers reported the situation to have been. Individuals who had never lived in particular households and others who had long since left were often found registered without qualification. Similarly, many contemporary and previous residents were not found on the registration lists. For the most part, therefore, household registration forms did not much help in the avoidance of omission. Interview inquiries about people other

than just relatives who may have once lived in particular households⁵ and questions asked about other households once located in the nearby vicinity but since razed proved a more fruitful approach.

Malaria Eradication Team maps drawn in the 1950s, despite some cartographic errors, were used to identify households which has disappeared in the interim. In addition, interviewers were instructed to look for physical evidence, such as household foundation sites or the ruins of house spirit shrines, to identify where houses had once stood.⁶ In all, some 92 former household sites were identified. To recover information about individuals who had once lived in these houses, interviews were subsequently conducted with surviving relatives or, lacking these, with their former neighbours.⁷

The interviewers were also instructed to use the opportunity of the subsequent life history survey round to review with respondents all the genealogical information that had been collected during the first survey round. Though particular attention was devoted to uncovering infant mortality omissions, information was also recovered on a number of other individuals who were missed for other reasons. A total of 118 individuals who were missed during the initial census were recovered through this additional check. Of these, 48.3 percent had died during the first month after birth and 44.1 percent between the first month and the age of five. Thus omission occurred primarily because individuals had not survived long enough in the community to be remembered.

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5. Clearly, the retrospective approach resulted in the omission of many short duration residents. In the past it was not unusual for agricultural workers from other communities to live with their employers' families. Some of these married into the community and took up residence there and would thus likely show up in genealogical reports. Most, however, would move on after a few years and go unrecorded.
 6. Both Collier (forthcoming) and Lefferts (1974) successfully used aerial-photograph maps for this same purpose. Such maps, though they exist, were not available for the purposes of my study.
 7. This was not always possible. There was no one, for example, qualified to report upon a settlement that once contained about ten households of related family members. This settlement was located in the midst of what are now village rice fields. About 30 years ago the inhabitants moved en masse to a village about 25 kilometers away.

At the conclusion of field work individuals were randomly selected from the school lists which contained in total 2,286 names and checked against census records to see if they had indeed been recovered. In nearly 90 percent of the cases a match was made. Failure to make a match did not necessarily mean that someone previously resident in the community had been excluded from the census. Name differences and bogus inclusions on the school lists⁸ were sometimes the responsible factors. As both the quality of the lists and the ease with which matches could be made deteriorated the further back in time the data were tested, this test of census records shows only that the data appear relatively complete for the most recent decades.

For earlier periods no written records were available for similarly testing completeness of the census data.⁹ Nevertheless, extreme discrepancies between demographic rates calculated from genealogical census data and levels of occurrence that could be reasonably expected for earlier periods of village life provide some measure of the extent of weakness in the data set. As may be seen in Table VI.5 the genealogical rates are increasingly suspect, and hence omission more likely to have occurred, the further back in time the data are analyzed. For example, an average crude death rate¹⁰ of only 1.9 computed for the first 50 years of community history indicates that mortality occurrences have been severely undercounted. Because, at least in principle, retrospective censusing entails comprehensive recovery of all demographic events in an individual's life, omission of mortality necessarily implies omission of corresponding events of entry into the population through either birth or in-migration. Additionally,

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8. One of my principal informants, a native-born villager who has taught at the village school for more than 30 years, confided that in the past school lists were sometimes padded for budgetary reasons by including the names of "phantom students". Similarly, the need for birth registration documentation as a requirement for school enrollment sometimes meant that individuals who had never lived in the community were listed on household registers.
 9. Lists of land registration deeds (chanoot) dating back to 1908 were found too late in field study to be used in conjunction with the genealogical census. A list of all village men who had ever been ordained in the local wat was said to exist but could not be located.
 10. The crude death rate and the following crude rates of demographic occurrence are presented as per 1000 person years lived.

Table VI.5. Average Crude Rates (per 1000 Person-Years Lived) of Demographic Occurrence Computed from Genealogical Census Data

Period (A.D.)	Crude Birth Rate	Crude Death Rate	Crude Rate of In-Migration	Crude Rate of Out-Migration	Average Yearly Population	Total Person-Years Lived	Period (B.E.)
1846-1895	59.3 (158)*	1.9 (5)	49.9 (133)	0.4 (1)	50	2664	2389-2438
1896-1920	38.7 (590)	7.9 (120)	17.6 (268)	2.5 (38)	595	15245	2439-2463
1921-1945	32.9 (1118)	12.1 (412)	7.7 (263)	8.1 (276)	1343	33574	2464-2488
1946-1970	35.7 (1728)	13.7 (661)	8.0 (389)	23.3 (1126)	1927	48390	2489-2513

* Number of events in parentheses.

recovery of both births and in-migrants during a specific time period was more easily achieved than recovery of deaths or out-migrants happening at the same time. Those born and in-migrating are likely to have survived many years closer to the present, while those who have died and to some extent those who have out-migrated must be recalled from the time at which the event occurred.

Impossibly low mortality levels mean not only that deaths have been undercounted but also that the community's population has been underenumerated. The result is that all demographic rates will have been correspondingly inflated. Though mortality omission probably means that some amount of birth omission has also occurred, the unlikely average crude birth rate of 59.3 calculated for the first 50 years, substantiates that the base population suffers from severe underenumeration. Similarly, low levels of out-migration (0.4) and high levels of in-migration (49.9) support the contention that the data are inadequate for this first 50 year period.

Though the birth rate of 38.7 calculated for the next 25 year period, 1896-1920, appears reasonable, that mortality increased to only 7.9 indicates that some population undercounting is still likely to have affected the calculation of rates. The continuing fall in fertility to 32.9 in the next period, 1921-1945, is accompanied by a continuing rise in mortality to 12.1. These offsetting patterns, both contrary to what would be expected to have occurred in this pre-modern stage of village life, begins to illuminate the complexities involved in separating data weaknesses from actual demographic occurrence. While the low mortality level probably means that some mortality omission has still occurred, the fertility level, though feasible, is likely the result of fertility omission finally overcoming the effects of population underenumeration. For this latter period, displacement from actual levels of occurrence at least for fertility may be explained largely in terms of infant and early childhood mortality omission.

The problem of selective memory has long been recognized in writings on the genealogical method. Rivers (1910) cautions about the likelihood of 'forgetting' offspring who die in infancy and the reluctance in some societies to converse about deaths. Though the latter is not problematic in Thai society, any realistic appraisal of the genealogical method must acknowledge the validity of the former. As Fortes (1954)

found and Hackenberg (1967) substantiated, the effort to record with accuracy retrospectively the infant mortality aspect of demographic behaviour is most likely to meet with poor results.

In preliminary investigation, Thai respondents showed no reluctance to report upon occurrences of infant mortality. Special attention was nevertheless devoted during the genealogical census to particularly stimulate their memories about this concern. The effort was facilitated by Thai adherence to the twelve-year animal cycle of Chinese origin mentioned previously. Because of the accuracy this allowed in dating births, interviewers were directed to question notable gaps in birth spacing. General review questions of each female family member's reproductive history also probed further for infant mortality occurrences.¹¹ Such was the response to this effort, that many villagers in addition to reporting infant mortality occurrence, volunteered information about instances of spontaneous abortion. A special code was added that this data could also be recorded.¹² Clearly, however, respondents were able to report with greater completeness on their own offspring than on the offspring of relatives or unrelated neighbours no longer resident in the community.

Given the general improvements that have occurred in health, nutrition, and child delivery practices at the community field site, we would expect that infant mortality has declined over the last several decades. Informants substantiate that this has been the case. Though Table VI.6 shows that such a decline has occurred from 30 years ago to the present, the trend prior to that time is seen to be a steadily rising rate of infant mortality. This early rise is best explained by systematically greater omission the further genealogical recall is from the present time.

-
11. These review questions were asked initially during the genealogical census interview and again during the life history interview. The results of the latter effort to recover infant mortality occurrences missed in the initial interview are presented in detail in the next chapter.
 12. Ninety-one instances of foetal wastage and stillbirth were recorded during the course of the census. Though obviously incomplete due primarily to memory lapse, the peak level recorded of over 120 foetal deaths per 1000 births only two years prior to field study provides some indication of the significant impact that such occurrences could be exercising on fertility levels.

Table VI.6. Infant Mortality Rates

Period (A.D.)	Births	Infant Deaths	Infant Mortality Rate (per 1000)	Period (B.E.)
1846-1896	175	0	-	2388-2439
1897-1906	173	9	52.02	2440-2449
1907-1916	264	15	56.82	2450-2459
1917-1926	362	23	63.54	2460-2469
1927-1936	462	39	84.42	2470-2479
1937-1946	494	72	145.75	2480-2489
1947-1956	641	102	159.13	2490-2499
1957-1966	770	102	132.47	2500-2509
1967-1976	458	55	120.09	2510-2519

In conclusion, if high levels of infant mortality omission occurred in the past it is also likely that large numbers of individuals dying during childhood and even during early adulthood may also have been omitted. Indeed, it is likely, as the low rates in Table VI.5 substantiate, that large numbers of individuals who left the population through either death or migration during early periods of community history were not recovered during the census. Nevertheless, the infant mortality rate of 145.8 per 1000 live births for the 1937-1946 period is clearly approaching what the actual level must have been. If such relatively high completeness has been achieved as long as 40 years ago for this the most difficult of demographic events to recover retrospectively, by implication other more easily recovered events such as adult deaths or migrations are likely to have been reported with near completeness.

While high levels of omission in early periods place limits upon how far retrospectively collected data can be stretched to reconstruct demographic history, it is also possible that the genealogical approach itself has produced a systematic bias towards high fertility. That is, as Barnes (1967) has noted, genealogical data refers to a select sub-sample of what was once a larger population. Zero and lower parity families will be less likely than higher parity families to have descendants among the contemporary reporting population. Given high levels of mortality in the recent past and high levels of emigration in the present such a bias could effect reported fertility levels even in relatively recent decades. Awareness that data bias would likely result if only the genealogies of currently resident villagers were collected was the primary motivation behind incorporating written records and informant reports into the process of genealogical censusing.

In Table VI.7 parity levels are presented for female cohorts of ever married women recovered during the genealogical census. Because women born less than 40 years ago have not yet completed childbearing they are not included in this table. Clearly the data do not support the view that genealogical censusing in the study community produced a substantial bias towards high fertility. The low levels of zero parity women for cohorts born more than a hundred years ago give, because of the small numbers involved, only slight indication that such women were systematically omitted. Similarly, the slightly higher proportions of high parity women in the 1877-1896 cohort are not sufficient to evince that substantial bias has occurred.

Table VI.7. Parity Levels by Cohorts of Ever Married Women in Baan Tang Chang

Birth Year (A.D.) Cohorts of Ever Married Women	Parity Levels (%)						Total	Birth Year (B.E.) Cohorts of Ever Married Women
	0	1	2-4	5-7	8-11	12-14		
1826- 1850	- (0)*	20.0 (2)	50.0 (5)	20.0 (2)	10.0 (1)	- (0)	100.0 (10)	2369- 2393
1851- 1876	6.0 (5)	12.0 (10)	28.9 (24)	38.6 (32)	13.3 (11)	1.2 (1)	100.0 (83)	2394- 2419
1877- 1896	9.0 (13)	6.9 (10)	39.3 (57)	26.9 (35)	17.2 (25)	3.4 (5)	100.0 (145)	2420- 2439
1897- 1916	10.7 (24)	13.8 (31)	35.7 (80)	26.3 (59)	12.1 (27)	1.3 (3)	100.0 (224)	2440- 2459
1917- 1926	7.1 (11)	13.6 (21)	27.9 (43)	32.5 (50)	15.6 (24)	3.2 (5)	100.0 (154)	2460- 2469
1927- 1936	9.1 (14)	13.0 (20)	27.9 (43)	25.3 (39)	22.1 (34)	2.6 (4)	100.0 (154)	2470- 2479
1937- 1946	9.1 (11)	15.7 (19)	44.6 (54)	23.1 (28)	7.4 (9)	- (0)	100.0 (121)	2480- 2489

* (N).

In this section an attempt has been made to show where strengths and weaknesses reside in the genealogical census data set. Clearly, the data are least reliable for the earlier periods of time. It is not surprising that villagers failed to accurately and comprehensively recall demographic events which occurred to individuals more than two generations removed from the present. Tracing genealogies back into the nineteenth century, while a useful tool to unlock memories of the distant past, proved an inadequate means to recover a quantitative data base of sufficient reliability for demographic reconstruction. Though supplementary use of written records and informant reports was apparently enough to overcome systematic bias towards high fertility, nevertheless increasingly substantial amounts of omission occurred the further back genealogies were pursued. This is most clearly shown by the conspicuously few reports of mortality occurrence recovered for earlier times.

Expectedly, data reliability improves for periods closer to the present. Whether it improves enough to warrant the tremendous effort involved in genealogical censusing is the primary consideration of the remainder of this chapter.

VI.2 Structural Analysis of Genealogical Census Data

Analysis of the structural components of population - the age-sex composition described by the aggregate of individual members - provides an additional means to investigate the quality and content of genealogical census data. In particular, the longitudinal dimension of the data set facilitates analysis that attempts to differentiate the effects of data weakness from those of substantive demographic occurrence. The biological norm that 105 to 106 males are born for 100 females is a useful standard for an initial test of genealogical census data. A more revealing and comprehensive view of genealogical census data however is provided by examining structural changes exhibited over the course of village history. To this end, population pyramids have been constructed over the entire period recovered through genealogical censusing. Through this means the structural changes in the genealogical census population may be examined and analyzed for what they reveal about reliability of genealogical census data and actual demographic occurrences in the community.

VI.2.1 Sex Ratios at Birth of the Genealogical Population

Prevalent thinking among demographers is that sex ratios at birth which deviate significantly from an established standard of 105 to 106 males per 100 females are much more likely to have resulted from data deficiencies than from differences, biological or otherwise, between populations (see Bogue, 1969: 166; Shryock and Siegal, 1976: 109).¹³ For developing regions particularly this mistrust of data is well-placed. Thus, comparing at-birth sex ratios computed from genealogical census data with the biological norm provides a preliminary indication of data quality.

An overall sex ratio at birth of 99.6 was computed for the genealogical population (Table VI.8). Viewing the village population in this regard as a sample of the world population,¹⁴ the difference between the world norm and the genealogical sex ratio at birth was found not to be statistically significant at the 95 percent confidence level. That is, sample variance alone is enough to account for the amount of difference between 99.6 and an expected value within the 105 to 106 range.¹⁵ Greater

13. Studies based upon reliable data have, however, in some instances shown that genetic, socioeconomic, and demographic factors may also have an effect upon sex ratios at birth. The principal findings as cited in Shryock and Siegal (1976: 109) are that "a high proportion of Negroes in the population is a principle characteristic associated with a low sex ratio", "a pronounced inverse relationship between the sex ratio and ... order of birth" has been established within U.S. data, and a predominance of male births has been observed for higher socioeconomic groups in Western countries.

14. Strictly, the village genealogical population is not a random sample and thus the statistical test applied is inappropriate. Hence the test is used in this instance to provide only an indication of data reliability.

15. The equation $\hat{p} = p \pm 1.96\sqrt{pq/n}$ where

p = probability of occurrence in the population;
 q = probability of non-occurrence in the population;
 \hat{p} = probability of occurrence in the sample; and
 n = number of observations in the sample,

was used to test the statistical significance of the genealogical sex ratio at a 95 percent confidence level. The worldwide non-African mean sex ratio at birth was assumed to be 105.5 males per 100 females (p = .51338; q = .48662). For the at-birth genealogical population of 3,799 a confidence interval of $.51338 \pm .01589$ was computed. The probability of occurrence for the population sample ($\hat{p} = .49908$) fell within the lower extreme of the confidence limit.

Table VI.8

Sex Ratio at Birth

Christian Era	Male	Female	Ratio (M/F x 100)	Buddhist Era
1847-1856	3	0	-	2389-2399
1857-1866	2	6	33.3	2400-2409
1867-1876	4	6	66.7	2410-2419
1877-1886	18	19	94.7	2420-2429
1887-1896	56	61	78.6	2430-2439
1897-1906	88	85	103.5	2440-2449
1907-1916	125	139	89.9	2450-2459
1917-1926	181	181	100.0	2460-2469
1927-1936	223	239	93.3	2470-2479
1937-1946	258	236	109.3	2480-2489
1947-1956	322	319	100.9	2490-2499
1957-1966	383	387	99.0	2500-2509
1967-1976	233	225	103.6	2510-2519
Total	1896	1903	99.6	

differences from the biological norm in the earlier periods may be the product of both random fluctuation and infant mortality omission.¹⁶

VI.2.2 Population Pyramids for the Genealogical Population

In this section two series of population pyramids constructed from genealogical census data are shown in Figures VI.2 and VI.3. In both, person-years lived rather than population counts were used as the base for pyramid construction. Totalled in the one and percentaged in the other, person-years were cumulated over 5, 10, 25, and 50 year periods of village history. This provides a means not only for overcoming the effects of random fluctuation and temporal heaping evident in yearly examination of the data, but also a measure that more accurately than point in time population counts reflects actual population experiences.

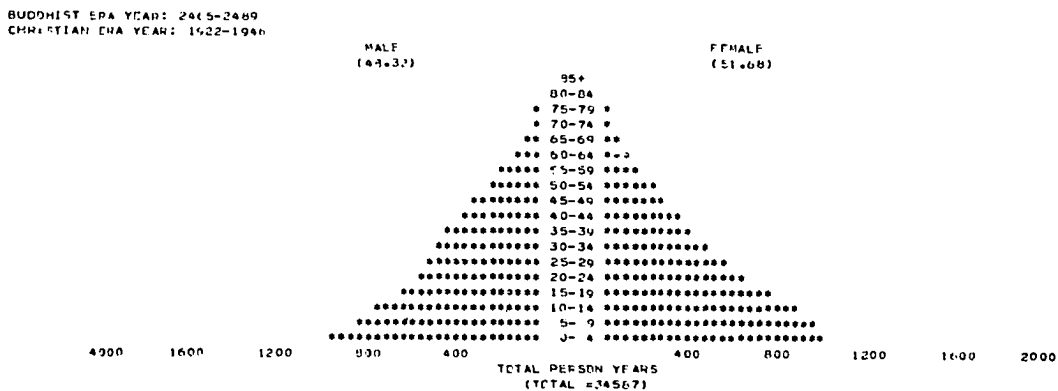
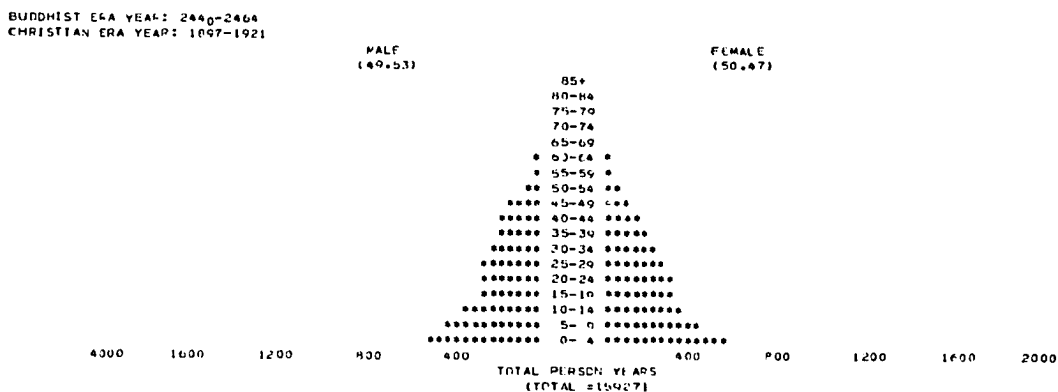
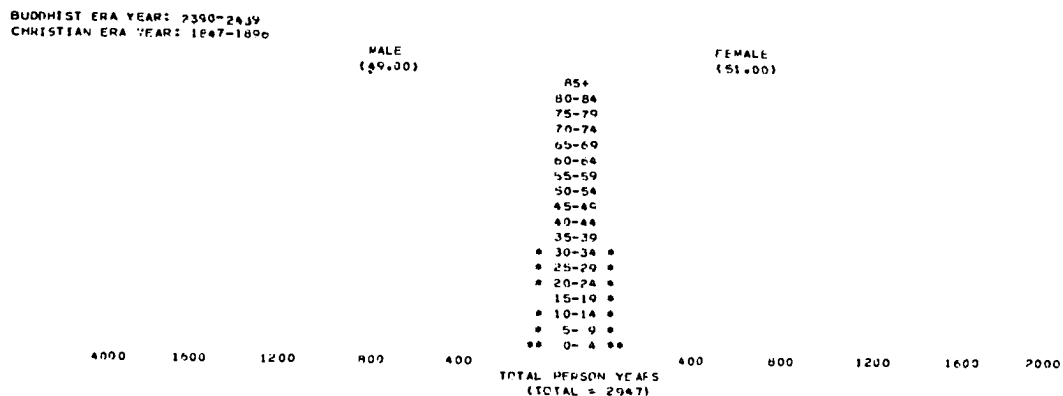
Population pyramids are particularly useful for drawing distinctions between phenomena that are produced by actual demographic change and those which result from structural features. For example, smaller cohorts at the youngest ages may more reflect that similarly smaller cohorts are passing through the reproductive years than that the women in these cohorts experienced actual fertility decline. Therefore, consideration must be given to the ramifications produced in a kind of echo effect as a given population is observed over time.

The two pyramid series are presented for the same purpose: to provide further indications of data reliability and preliminary evidence of actual demographic occurrences in the study community. Each series, however, offers distinct advantages. In the first (Figure VI.2), total-based pyramids allow comparisons which concentrate upon changing population size itself. In the second (Figure VI.3), the percentage-based pyramids facilitate, without the confounding influence of changes in size, time-dimensional sex-age comparisons.

To overcome fluctuations that result from small numbers and distortions that arise from obvious dating imprecision, pyramids of

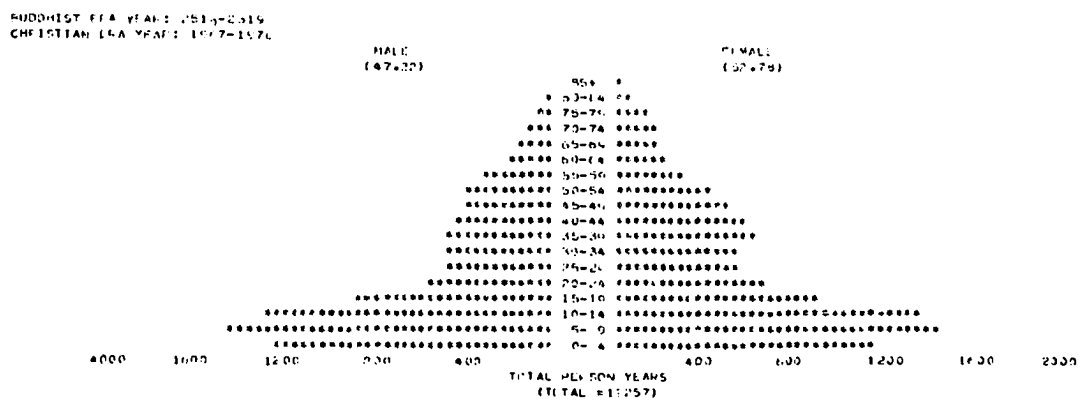
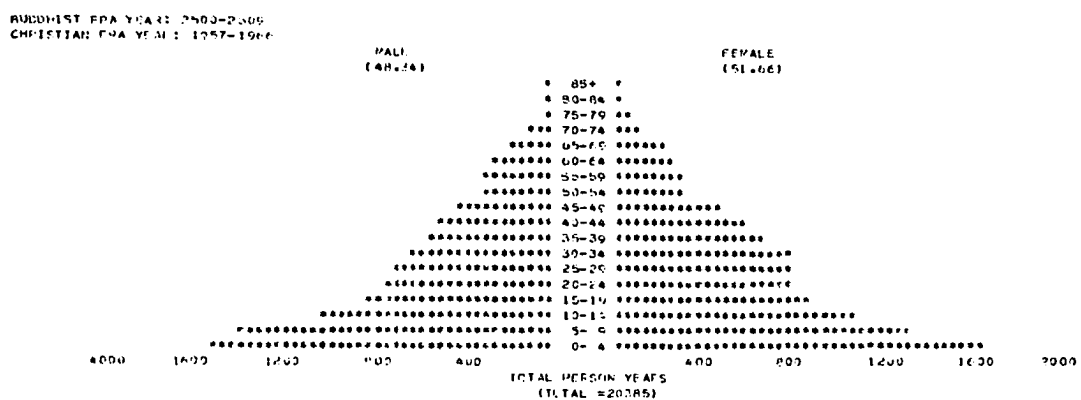
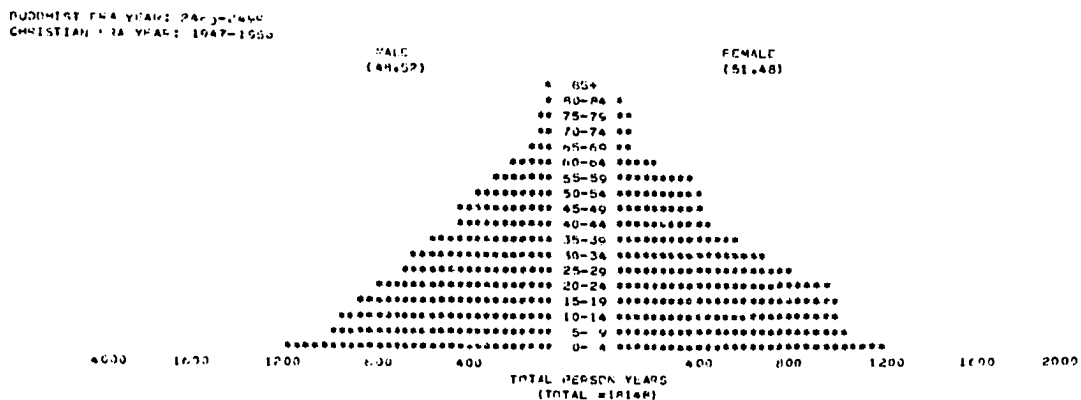
16. Evidence that male infant mortality levels usually exceed female levels is provided by the four model life table series computed by Coale and Demeny (1966). However, for a contrary view on infant mortality sex differentials in tropical Africa see Page, 1974: 90).

Figure VI.2. Population Pyramids from Genealogical Census Data (Person-Years)



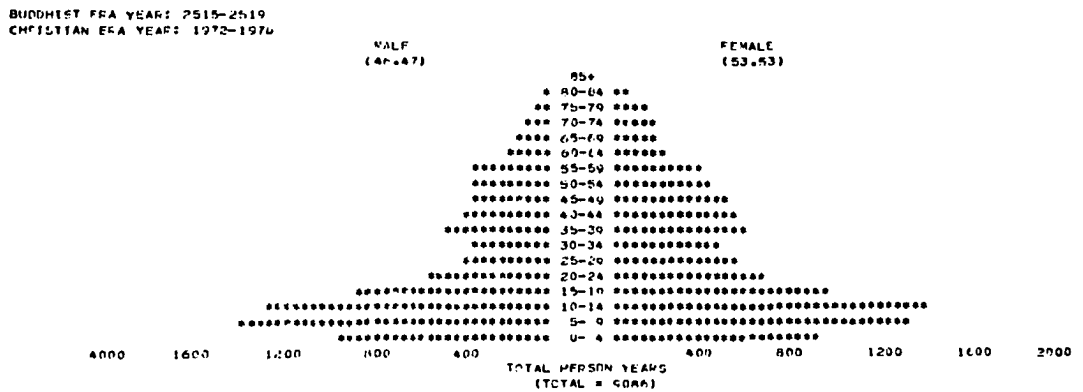
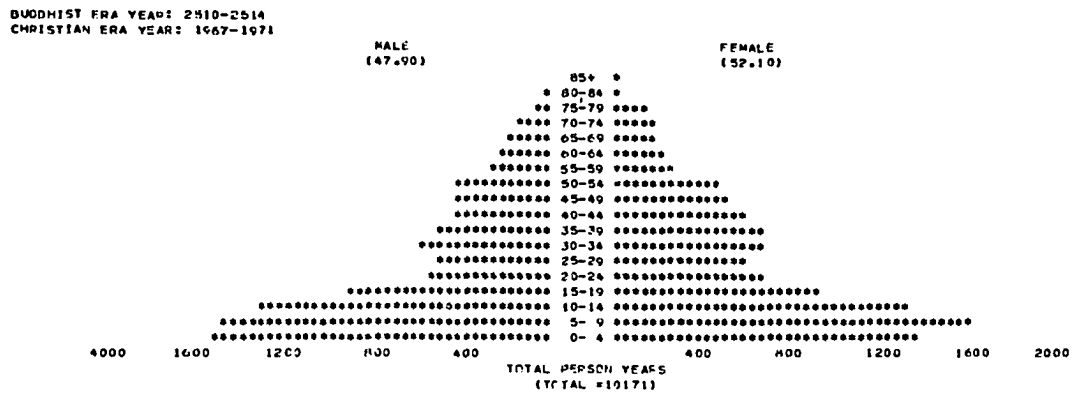
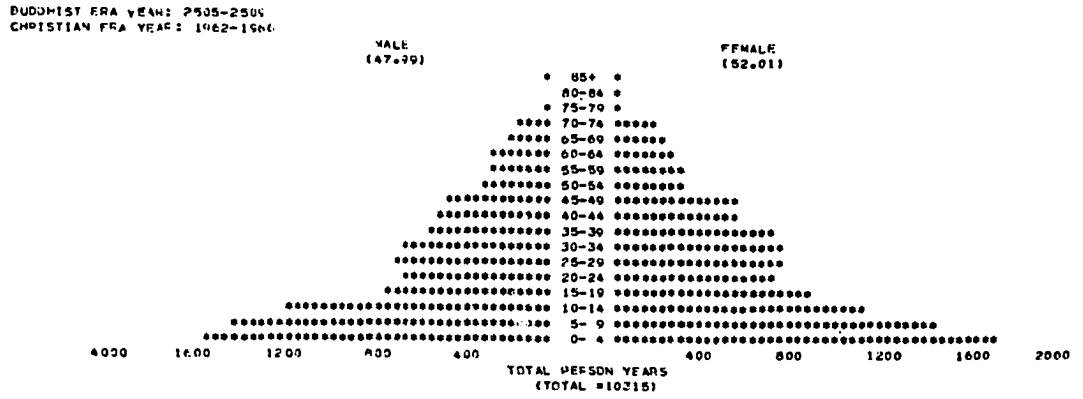
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Figure VI.2. (continued)



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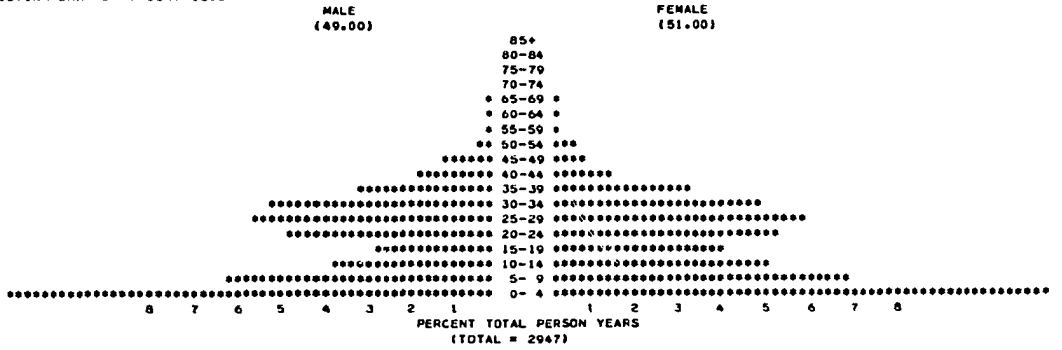
Figure VI.2. (continued)



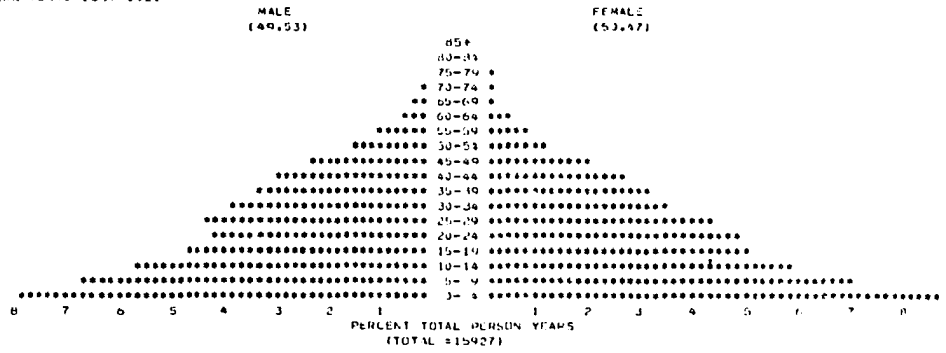
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Figure VI.3. Population Pyramids from Genealogical Census Data (Percent Person-Years)

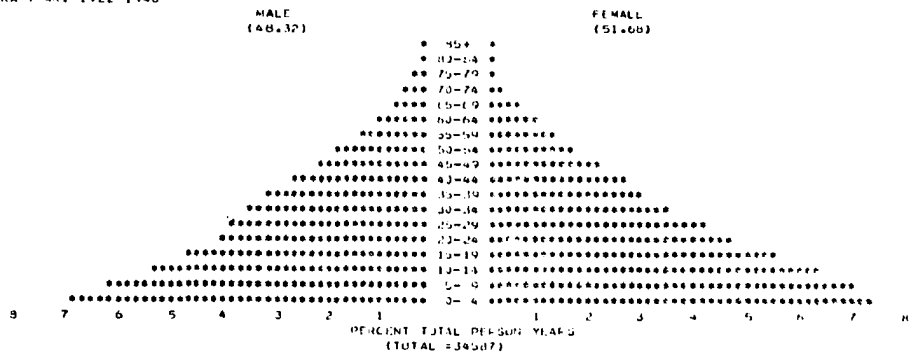
BUDDHIST ERA YEAR: 2390-2435
CHRISTIAN ERA YEAR: 1847-1890



BUDDHIST ERA YEAR: 2440-2466
CHRISTIAN ERA YEAR: 1897-1921

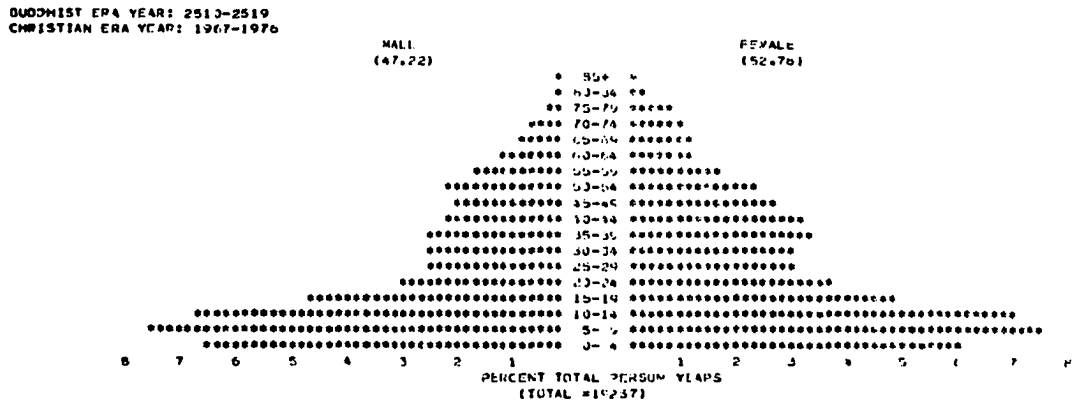
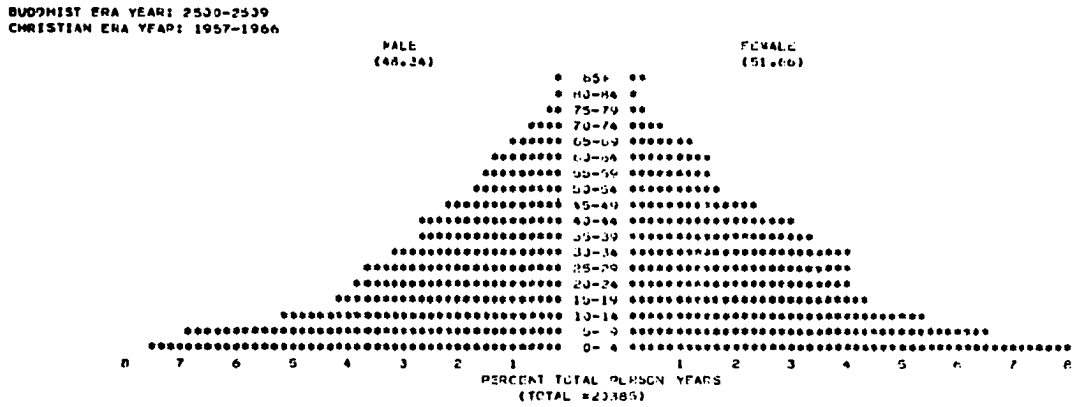
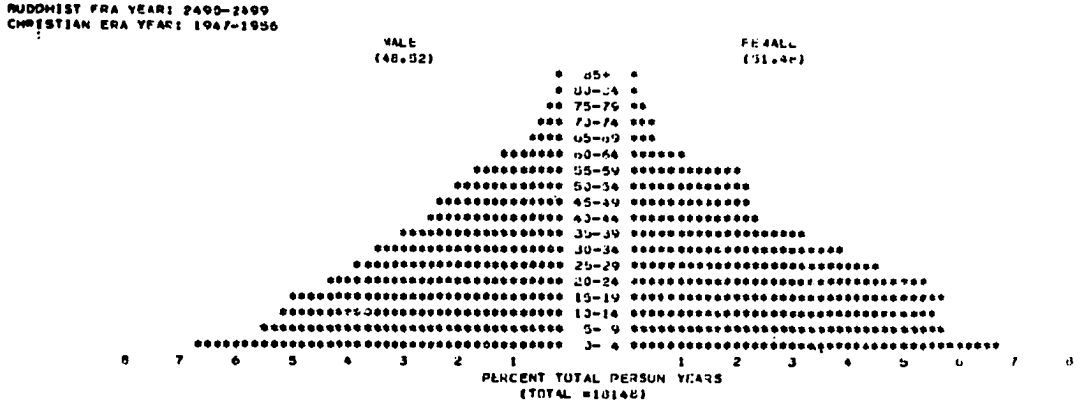


BUDDHIST ERA YEAR: 2466-2489
CHRISTIAN ERA YEAR: 1922-1946



contd.

Figure VI.3. (continued)

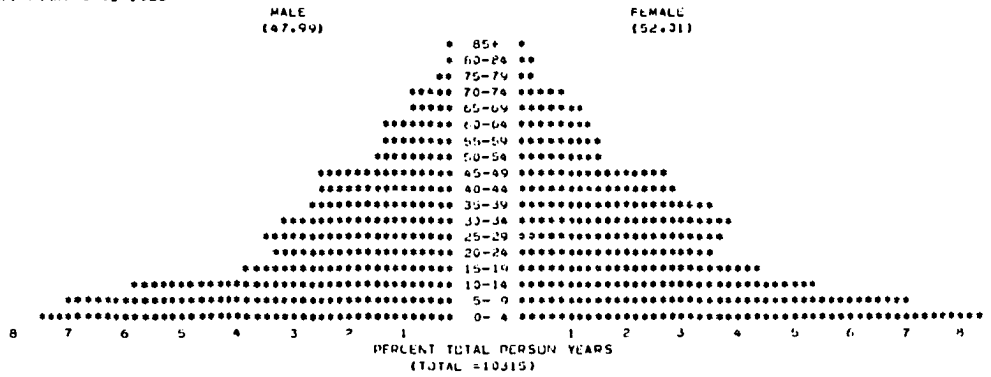


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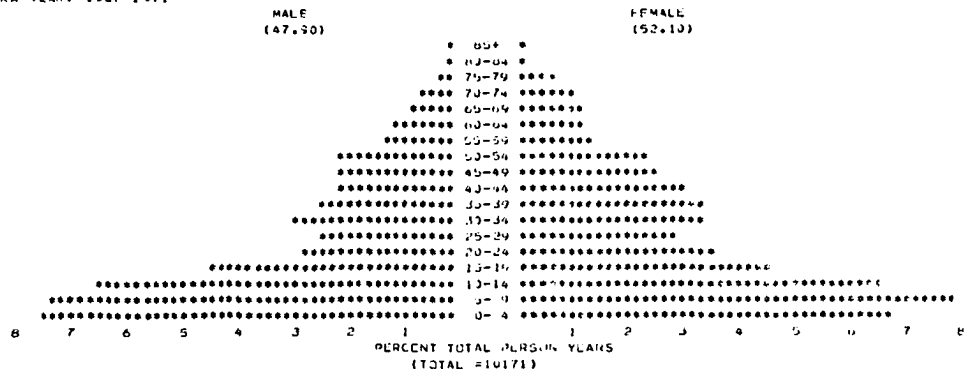
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Figure VI.3. (continued)

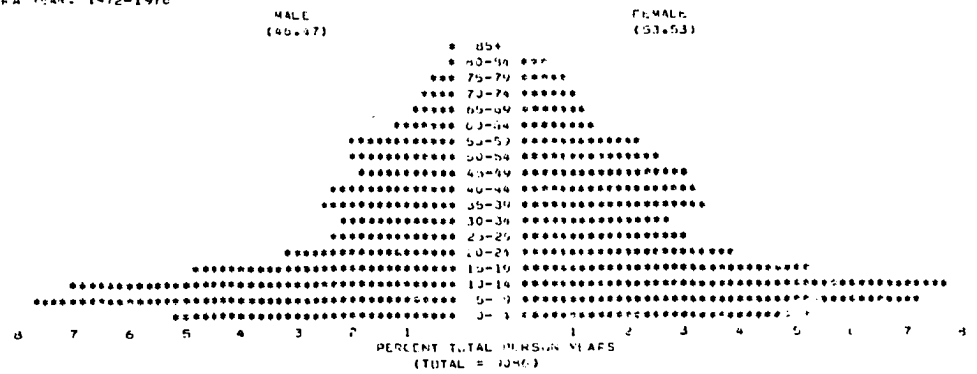
BUDDHIST ERA YEAR: 2505-2509
CHRISTIAN ERA YEAR: 1962-1966



BUDDHIST ERA YEAR: 2510-2514
CHRISTIAN ERA YEAR: 1967-1971



BUDDHIST ERA YEAR: 2515-2519
CHRISTIAN ERA YEAR: 1972-1976



successively longer durations are used the further back in time analysis proceeds. For example, the extremely small numbers of people who lived in the community during its first century made it necessary to use 50 and 25 year pyramids for this period. Alternatively, five and ten year population pyramids are most useful for the later time periods when the population was much larger.

By looking at pyramids in both series, particular patterns can be identified and examined. Though mindful that both data weaknesses and particular structural features may affect pyramid shape, the approach taken here is to view village population structure for indications that substantive demographic change has occurred. While any explanations offered at this point as to why such changes have occurred are highly speculative, more thorough investigation may be conducted during the separate considerations of mortality, fertility, and migration undertaken in the following chapter.

From the first series of population pyramids it is obvious that population growth has occurred in and characterized the study community through its first century. Only in the most recent decade can actual population decline be detected. With the exception of the first 50 years of village history, the basic structure of the population has remained remarkably unchanged. The consistently broad-based triangular shape of the pyramids implies that high fertility had characterized the community throughout most of its history. However, a cautionary note about data completeness in earlier periods must be interjected. The extremely broad base of the 1847-1896 pyramid and the relatively broad base of the 1897-1921 pyramid may be more the product of data bias than high fertility. Younger population numbers at any point in time will have likely survived much closer to the present than older members. Thus retrospective reconstruction of the population for particular periods may reflect the tendency for more complete recovery of younger vis a vis older population members. From the 1920s onwards this bias has probably only minimally affected the data. Only in the last decade, and only in the youngest cohort, has the basic triangular shape of the pyramid been modified. While this recent development demands explanation, it is noted that some other changes have also occurred in village population structure.

With the passage of time the pyramid peak has reached continually higher age levels. Similarly, it has become broader for these older age groups. This is unlikely to have resulted from data weakness - the younger

population members who did not survive long in the community, not the older ones who did, are most likely to have been omitted during earlier periods of genealogical recovery. Thus, changes at the higher age levels are more likely the result of actual demographic change than of data reporting improvement. Description of what has occurred leads to the most likely explanation of why it occurred: the numbers and proportions surviving to older ages in the population have increased because of general improvements in health conditions.

The second pyramid series provides the means to identify sex and age distribution changes over time. Though for the most part a fairly even balance between the sexes was maintained throughout village history, some perhaps significant shifts may still be observed. Beginning with the 25 year pyramid for 1922-1946, there appears to be a consistent decline of males 25-49 years of age compared to females. This is substantiated by the sex ratio computations for the mid-decade population presented in Table VI.9. From the previous analysis of sex ratio at-birth differentials it is clear that these increasing proportionate differences are not the echo of birth cohort differentials. Therefore, the shift results from the combined effects of sex differentiated mortality and migration patterns operating before and through these ages.

In the most recent years the marked indentations at the 20-35 year age groups give classic indication that substantial age selective migration is occurring. However, the almost identical images on both sides of the pyramid show only weak evidence of sex selectivity. It is possible that what migrant sex selectivity has occurred, has been obscured by compensating differentials in mortality. As migrant sex differentials typically, and especially at young and mid-adult ages, favour males over females (rather than the reverse) greater improvements in female than male mortality may also have been occurring during this period. These features of the pyramid structure direct attention to an examination of age-sex migration and mortality differentials which will be undertaken in the following chapter.

One likely source of male-female mortality differentials through the years of young and middle adulthood is the added risk that females face as a result of childbearing. Improved health conditions and consequent declines in maternal mortality would result in reshaping the pyramid through higher survival of women through the childbearing years. The

Table VI.9. Mid-Decade Sex Ratios for Genealogical Census Population,
25-49 Years of Age.

Year (A.D.)	Population 25-49 Years Old		Sex Ratio ($\frac{M}{F} \times 100$)	Year (B.E.)
	Male	Female		
1932	199	199	100.0	2475
1942	244	250	97.6	2485
1952	268	287	93.4	2495
1962	293	335	87.5	2505
1972	234	280	83.6	2515

declining 25-49 year old sex ratios are generally consistent with the beginnings of village access to modern medical facilities. Though most deliveries in the village continued to be at home with the assistance of traditional mid-wives, it is a clear and established practice for women experiencing difficulty at childbirth to be taken to a nearby health center or hospital. In the changing structure of the population we may have a preliminary indication of the impact that modern health care has had on village life.

Given the notable difficulties that researchers face in collecting infant and early childhood mortality data retrospectively (Bogue and Bogue, 1970), correspondingly greater caution must be exercised in interpreting what proportionate changes at the 0-4 age level mean. While the base of pyramids has remained consistently broad, pyramids for recent years reveal that two distinct phases of proportionate decline have occurred. Through the years 1922-1946 and 1947-1956 a continuing proportionate decline is recorded for the youngest age group. This is followed during the next decade by recovery. In the most recent decade, though particularly within the last five years, a more precipitous decline occurred. While change in fertility levels provides a possible explanation for these occurrences, other explanations related to data quality must also be considered.

From the previous discussion of male-female differentials in the mid-adult ages, it is apparent that these two declines in birth cohorts do not reflect changes in the proportions of women of childbearing age. Rather the reverse has happened - more women have given birth to fewer children during these two periods.

Though an explanation of fertility decline and recovery in the earlier period coincides with the worldwide Depression, War, and post-War years, all of which had some impact on the village community, this same change could have been the product of infant mortality reporting improvements alone. Thus, an effort must be made to separate out the amount of this change that is attributable to each of these sources. This is undertaken in detail in the next chapter. Similarly while fertility decline is an attractive hypothesis for the more recent period which witnessed growing acceptance of modern contraceptive use, the proportionate decline in the 0-4 age group within the last ten years is too sharp to be accepted without a sceptical look at the data. While substantive demographic changes may in fact have occurred during both these periods, data weaknesses have

probably produced exaggerated changes in the population pyramids.

In this section, several possible explanations of substantive demographic change have been offered on the basis of population structural changes shown by viewing the two series of population pyramids. Health improvements have been posited as possibly responsible for greater longevity of population members. Sex ratio differentials in the middle years of life have also been viewed as giving indication that though migrant sex selectivity may have occurred, the effects may be obscured by improved female survivorship through the reproductive ages. Finally, changing proportions at the youngest age level may evince the occurrence of fertility change at different periods of village history. While these are offered as only tentative explanations for what substantive demographic changes may be responsible for the structural change observed, they do point to lines of investigation in need of further pursuit.

IV.3 Summary and Conclusion

This chapter provides preliminary indication that substantial weaknesses exist in the genealogical data. While the temporal orientations of Thai villagers and the placement of events within a framework of their own family and community history resulted in a high level of accuracy for demographic occurrences which were recovered, a significant number of events and people were omitted. This was especially evident for the earlier periods of demographic reconstruction, but may also have occurred to some extent in recent years as well. Even though a variety of means were used to extend retrospective recall beyond a strictly genealogical framework, the amount of omission that still occurred may have been sufficient to overcome the usefulness of resulting data. However, because the genealogical approach is of such potential value for reconstructing the demographic histories of areas without extensive or reliable written records, final judgement of its wider applicability is temporarily deferred. In the following chapter genealogical census data are explored in greater detail for evidence of weaknesses and, where the weaknesses do not appear overwhelming, analyzed for indications of actual demographic patterns that have characterized the community's history.

CHAPTER VII
MORTALITY, FERTILITY, AND MIGRATION PATTERNS
IN HISTORICAL PERSPECTIVE

Demographic phenomena are inscribed in time. Such phenomena cannot be explained nor understood unless they have been traced through the concatenations of many decades or centuries, as far back as available observations and documents permit us to go. To study demography only from current events is equivalent to the study of astronomy without benefit of earlier observation or to the construction of a theory of evolution with attention to none but presently living species.

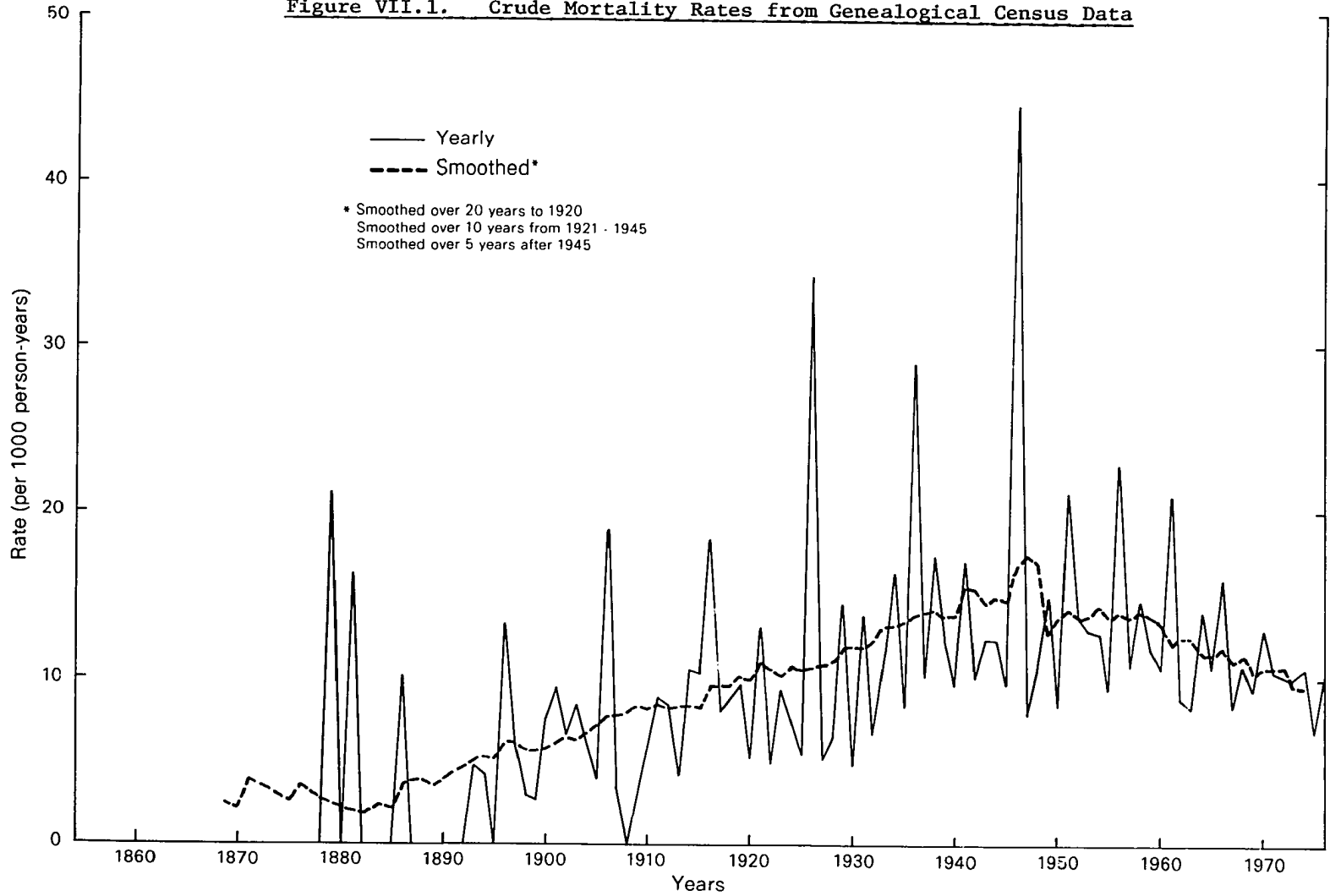
- Louis Henry

The overview of the last chapter gives way here to separate considerations of each of the three demographic variables - mortality, fertility, and migration. The objective remains, however, that of both testing data reliability and providing a dynamic view of population history in the study community. Where possible, clearer delineation of data weaknesses or fuller exposition of demographic patterns will be provided by references to other data both as collected during field study and as available from other research efforts in Thailand. Most notably useful will be data collected during the life history survey of current community residents.

VII.1 Mortality

This discussion begins with an overview of mortality data collected during the genealogical census. The reliability of mortality reporting as shown by the crude mortality rates of Figure VII.1 is suspect on several grounds: five and ten year heaping patterns are evident in all but the last ten year period, the overall level in all but the most recent decades is too low, and the steadily rising trend before 1946 is clearly contrary to what villagers themselves had to say about their own history and to what outside observers would have reasonably expected. To pursue this discussion mortality data from the study community will be viewed from two different perspectives: the quantitative

Figure VII.1. Crude Mortality Rates from Genealogical Census Data



data itself will be scrutinized for reliability, and substantive analysis will be conducted to uncover some dimensions of mortality change in the village community.

VII.1.1 An Examination of Mortality Data Reliability

When mortality data is collected retrospectively some amount of omission is likely to occur. Inability to recall deaths which occurred years in the past is likely to produce a biased data set: individuals who have survived lesser amounts of time in the community are those most likely to be omitted. Similarly, the further removed from the present point of recall, the longer will individuals have needed to survive to be remembered. For example, while a seven year old child dying 15 years ago may be quite easily recalled, a seven year old dying 50 years ago could be quite understandably forgotten. To provide some insight into the extent that undercounts occurred during the retrospective collection of mortality data, life tables were constructed from genealogical census data.

Age-specific mortality rates computed from the genealogical data set were used to generate a series of life tables for the study community. Examples of resulting computer output are shown in Figure VII.2¹. As part of the procedure, expectations of life (e_x) were computed. Most simply stated, the expectation of life is a summary measure of mortality conditions which prevail beyond a given age. Life expectancies are an average of the number of years an individual living under a particular schedule of mortality may expect to survive. A principal advantage of the measure is that being life table derivatives they are age standardized. Thus they may be used comparatively to examine in summary fashion mortality differentials between different populations or those within the same population at different points in time.

Expectations of life at older ages are frequently used to overcome problems of data weakness at younger ages. For example, incomplete infant mortality data is avoided by examining life expectancy at the age one (e_1). The problem of prior concern here, however, is not that of

1. These life tables were generated by the package program MXQX of the Demographic Computer Library (Shaw and Johnson, 1971:4). This program uses sex specific infant mortality rates for the first age interval and age-sex specific mortality rates for all subsequent age groupings. With the exception of first year computation procedures, the program utilizes the Reed-Merrill method for life table computation.

Figure VII.2. Life Table Computer Output

Males 1946-1950

AGE	Q(X)	D(X)	M(X)	l(X)	L(X)	P(X)	T(X)	E(X)
0	0.19858	19858.	.22906	100000.	86695.	.79428	4972089.	49.72
1	0.04771	3823.	.01232	80142.	310444.	.94650	4885394.	60.96
5	0.02988	2281.	.00607	76319.	375891.	.98478	4574950.	59.95
10	0.00010	7.	.00002	74038.	370171.	.99439	4199059.	56.71
15	0.01112	823.	.00224	74031.	368095.	.98748	3828887.	51.72
20	0.01394	1020.	.00281	73208.	363488.	.98557	3460792.	47.27
25	0.01474	1064.	.00297	72187.	358278.	.99253	3097304.	42.91
30	0.00010	7.	.00002	71124.	355601.	.98998	2739026.	38.51
35	0.01994	1418.	.00403	71117.	352039.	.98936	2383426.	33.51
40	0.04156	2896.	.00849	69699.	341253.	.95783	2031387.	29.15
45	0.04280	2859.	.00875	68802.	326864.	.94750	1690134.	25.30
50	0.06264	4005.	.01293	63943.	309703.	.90601	1353270.	21.32
55	0.12744	7639.	.02722	59936.	280594.	.81615	1053567.	17.58
60	0.24850	12996.	.05675	52299.	229006.	.77683	772973.	14.78
65	0.18947	7447.	.04186	39303.	177899.	.77283	543967.	13.84
70	0.27369	8719.	.06342	31856.	137485.	.77935	366068.	11.49
75	0.14763	3416.	.03188	23138.	107148.	.73647	228533.	9.88
80	0.39950	7879.	.09965	19722.	78911.	.44521	121435.	6.16
85	0.81338	9633.	.27418	11843.	35132.	.21039	42524.	3.59
90	1.00000	2210.	.29901	2210.	7392.	.0	7392.	3.34

Females 1946-1950

AGE	Q(X)	D(X)	M(X)	l(X)	L(X)	P(X)	T(X)	E(X)
0	0.18710	18710.	.21300	100000.	87839.	.78794	4448986.	44.49
1	0.08871	7212.	.02356	81290.	306130.	.93538	4361147.	53.65
5	0.01017	753.	.00204	74079.	368511.	.99026	4055017.	54.74
10	0.00931	683.	.00187	73326.	364921.	.98589	3666506.	50.28
15	0.01895	1377.	.00383	72643.	359771.	.98009	3321585.	45.72
20	0.02089	1489.	.00422	71266.	352607.	.97553	2961814.	41.56
25	0.02812	1962.	.00570	69777.	343979.	.95796	2609207.	37.39
30	0.05637	3823.	.01160	67815.	329517.	.94040	2265228.	33.40
35	0.06303	4033.	.01302	63992.	309877.	.90049	1935711.	30.25
40	0.13845	8301.	.02975	59959.	279040.	.90317	1625834.	27.12
45	0.04851	2506.	.00994	51657.	252021.	.96413	1346794.	26.07
50	0.02259	1110.	.00457	49151.	242980.	.94028	1094773.	22.27
55	0.09770	4694.	.02054	48041.	228470.	.83614	851793.	17.73
60	0.23718	10281.	.05382	43347.	191034.	.78716	623323.	14.38
65	0.18093	5983.	.03979	33066.	150375.	.75947	432289.	13.07
70	0.31330	8485.	.07430	27084.	114205.	.76253	281914.	10.41
75	0.12704	2363.	.02713	18598.	87085.	.66310	167710.	9.02
80	0.57731	9373.	.16231	16236.	57746.	.34202	80625.	4.97
85	0.84882	5825.	.29494	6863.	19750.	.15843	22880.	3.33
90	1.00000	1038.	.33157	1038.	3129.	.0	3129.	3.02

overcoming weaknesses in the genealogical data but rather that of more precisely identifying where and when these weaknesses have occurred.

In Table VII.1 expectations of life at several age levels are presented for 110 years of genealogically-based village history. The time periods chosen provide a sufficiently large base of actual person years lived within each interval to minimize the effects of random fluctuation due to small numbers in population age groups at any one moment in time. The periods were chosen purposefully to break at the year 1946, a watershed year that marks the beginning of rapid change in the village community.

Prior to 1927 the life expectancy trends over time evince extensive weakness in the genealogical data. A declining expectation of life, indicating substantial mortality increase, is exactly contrary to what informants report and common sense assessment indicate the actual situation to have been. Rather this early period of village history was most likely characterized by sustained rates of relatively high mortality. While greater contacts between the Thai national polity and the outside world which occurred during this period may have had some impact on mortality levels, it is likely to have been only marginally felt in the distant frontier community of Baan Tang Chang. At any rate, the effects seem to have been compensatory. While on the one hand mortality levels could be reduced by the early introduction of such Western medical practices as the smallpox vaccine, on the other the sheer fact of greater contact is likely to have also introduced new disease strains.

The pattern exhibited by life expectancy changes before 1927-1946 is compatible with an explanation of severe weaknesses in the data for this period. For the earliest periods of retrospective recall substantial amounts of mortality omission occurred. Life expectancies at birth of nearly 70 years are clearly unrealistic. After 1927-1946 life expectancy increases reflect the health condition improvements that have occurred in the village since that time. Obviously the low level life expectancies of the 1927-1946 period could, because of mortality omission, be in reality lower still. However, the changes since that time are at least in the expected direction.

Expectations of life have been used here to indicate general mortality weaknesses in the genealogical data set. Before 1927 the weaknesses appear sufficiently severe to obviate further analysis of mortality during the early period of village history. On this score the genealogical approach has failed to produce reliable data. However, further tests must

Table VII.1. Expectations of Life at Selected Ages for the Genealogical Population

Years (A.D.)	Males					Females					Years (B.E.)
	e ₀	e ₁	e ₁₀	e ₂₀	e ₅₀	e ₀	e ₁	e ₁₀	e ₂₀	e ₅₀	
1867-1886	69.48	68.49	59.50	49.51	19.53	63.47	62.47	53.48	43.49	20.54	2410-2429
1887-1906	54.64	55.60	49.48	41.22	14.57	67.77	68.68	60.78	52.72	28.92	2430-2449
1907-1926	56.30	59.43	53.50	45.77	20.09	57.73	59.96	52.50	43.27	21.22	2450-2469
1927-1946	50.46	59.31	52.59	43.74	20.57	52.76	55.55	49.17	40.06	20.71	2470-2489
1947-1966	54.70	63.01	56.12	46.95	21.22	57.11	65.59	60.10	50.94	26.60	2490-2509
1967-1976	58.12	64.38	57.99	50.17	21.76	62.35	70.52	64.34	54.96	28.45	2510-2519

be done before judgement is passed on the most recent 50 years recovered in the genealogical census. For this purpose a series of age interval life expectations² computed for these last five decades are presented in Table VII.2. To facilitate comparisons between expectations computed over age intervals of different lengths, all measures have been converted into proportions of the particular age intervals.

With development and improved health conditions, the expectations of life within particular age intervals will usually increase. From the genealogically-based life table computations presented in Table VII.2, survival from ages 20 to 50 and 50 to 85 has conformed to this pattern. Over the last 50 years the interval life expectancies of adult males and particularly females have increased substantially. For males the first increases occur between 1927-1936 and 1937-1946. For females the first increases occur between 1937-1946 and the post-War decade. In general, survivorship for both sexes within these age groups continues to increase during the subsequent 20 years. As this overall pattern coincides with the beginning and continuance of modernization in the Central Plain, including substantial development of public health programs and facilities in the vicinity of Baan Tang Chang, these life table increases appear to accurately reflect changing conditions in the village during this period. However, male mortality may have been more completely reported from an earlier time than female mortality. Additionally, for both sexes the lowest adult interval life expectancies of 40 and 50 years ago may likely have been lower still due to omissions occurring in these early periods. The trends over the last 30 years provide some indication that the mortality of villagers who had survived at least to adulthood appears to have been reliably reported. Both because the individuals who died lived in the community long enough to be remembered and because their deaths occurred within the recent memories of current residents they were subject to relatively complete recall.

-
2. The age interval expectation of life is a life table property computed by the following equation:

$${}_n e_x = \frac{{}_n L_x}{l_x}$$

where ${}_n L_x$ is the number of life table person years lived between exact age x and exact age $x+n$, and l_x is the life table population at age x . An interval life expectation restates a particular mortality schedule in terms of the number of years on average that an individual can expect to live between ages x and $x+n$.

Table VII.2. Interval Life Expectancies from Genealogical Life Tables

Male				
<u>Interval Life Expectancies</u>				
<u>Years (A.D.)</u>	<u>19^l₁</u>	<u>30^l₂₀</u>	<u>35^l₅₀</u>	<u>Years (B.E.)</u>
1927-1936	18.10	27.51	19.72	2470-2479
1937-1946	18.49	27.76	20.91	2480-2489
1947-1956	18.41	28.45	21.65	2490-2499
1957-1966	18.26	28.79	20.19	2500-2599
1967-1976	18.20	29.69	21.56	2510-2518
<u>Interval Proportions</u>				
1927-1936	.95	.92	.56	2470-2479
1937-1946	.97	.93	.60	2480-2489
1947-1956	.97	.95	.62	2490-2499
1957-1966	.96	.96	.58	2500-2509
1967-1976	.96	.99	.62	2510-2519
Female				
<u>Interval Life Expectancies</u>				
<u>Years (A.D.)</u>	<u>19^l₁</u>	<u>30^l₂₀</u>	<u>35^l₅₀</u>	<u>Years (B.E.)</u>
1927-1936	18.32	25.41	23.53	2470-2479
1937-1946	17.98	25.16	19.39	2480-2489
1947-1956	17.73	28.02	25.65	2490-2499
1957-1966	18.32	28.84	25.75	2500-2509
1967-1976	18.31	29.13	28.07	2510-2519
<u>Interval Proportions</u>				
1927-1936	.96	.85	.67	2470-2479
1937-1946	.95	.84	.55	2480-2489
1947-1956	.93	.94	.73	2490-2499
1957-1966	.96	.96	.74	2500-2509
1967-1976	.96	.97	.80	2510-2519

In contrast, deaths occurring between the ages of one and 20 years of age have not been as fully recalled. For both males and females the interval survival proportions are much the same now as they were 50 years ago. Clearly this is likely to result from there having been systematic omission of individuals dying at young ages. That the mortality reports are incomplete at younger ages is substantiated by analysis of infant mortality levels computed from genealogical census data.

Because omission of infant and early childhood deaths is the most problematic feature of retrospective data collection, an effort is made to test the reliability of the genealogical data during the first year of life. To this end, infant mortality rates computed from genealogical data are compared with those from the life history data set. The results are used to assess the completeness of genealogical recall.

Clearly people are able to recall with greater accuracy demographic events which pertain directly to their own lives than those which happened in the lives of others. In the genealogical census, respondents were required to report on occurrences of mortality in their own families as well as those of sometimes quite distant relatives. Because of the series of cross-checks and rechecks built into the genealogical survey it was possible to recover many infant deaths that would otherwise have been lost. In some instances, respondents noted that they had initially failed to report an infant death because they thought it unimportant; in others they had simply forgotten or never known of a particular occurrence. The further an individual was required to report along extending branches of his family tree, the more likely were omissions of infant mortality to occur. As the survey proceeded further back in time, increasingly reliance had to be placed upon fewer and fewer surviving respondents who, though frequently demonstrating acute memories, could not be reasonably expected to have total recall. Despite the concerted effort devoted to getting as complete coverage as possible, it was anticipated that some omission would occur, particularly with regard to infant mortality.

The life history interview provided an opportunity for rechecking the genealogical reports. Prior to conducting the life history interview, interviewers asked respondents to review the information that had been summarized on the family trees. In addition, female respondents were questioned specifically about the survival of their own children through the first years of life. As a result several additions to and corrections

of the original genealogical reports were made on this basis. In Table VII.3 the results of this effort for improving infant mortality recall are shown in the update of genealogical census data.

In the comparisons made on Table VII.3 the infant mortality rates from the life history data are taken as the standard. Of course the life history data may also suffer from underenumeration. The eldest respondents particularly may have forgotten to report some occurrences of infant mortality. Alternatively, differential survival of women by childbirthing and infant mortality experiences may also result in bias. Nevertheless, because women were reporting upon their own children, and were stimulated to do so by use of the life history matrix, the life history rates are acceptable as a reliable indication of village infant mortality levels.

In the original census round, as can be seen from column 12, it is estimated that nearly 40 percent of first year mortality occurrences were omitted. With the update provided by the second interview substantial improvements have been made, as shown in column 13, particularly in data for the last 30 years. Prior to that time, despite the effort expended in the second survey round, the genealogical infant mortality data are still greatly deficient. It can be inferred that similar deficiencies characterize genealogical data for other deaths occurring in early childhood.

In conclusion the genealogical mortality data suffer from serious weaknesses. Such is the level of omission in recalling deaths which occurred more than 50 years ago that substantive analysis of mortality trends in these early periods would be fruitless. With the caution that some amount of omission has occurred even in more recent periods, some analytical efforts are made. Within adult ages particularly the data appears both reasonably complete and recent mortality decline sufficiently steep to merit further investigation. Even though genealogical infant mortality rates suffer from some underenumeration even in the most recent decades, the genealogical approach has achieved better results than other efforts to estimate levels of recent occurrence.³ Part

3. Though direct comparison between data from the study community and broader regions must be made with caution, the up-dated genealogical infant mortality rate of 128.4 for the years 1964-1967 accords well with the statement of Knodel and Prachuabmoh (1974: 445) that their calculation from Longitudinal Survey data for rural Thailand of an infant mortality rate of 112 for the same period underestimates the actual level.

of this however must be attributed to the use of the life history matrix survey as a means to stimulate women to report upon occurrences of infant mortality among their own children.

VII.1.2 Patterns of Recent Mortality Decline in the Study Population

Rungpitarangsi (1974: 55) estimates that a crude mortality rate in the low to mid-twenties prevailed in pre-modern Thailand. Given the inadequacies of mortality data in early periods of genealogical censusing, this estimate is acceptable as a reasonable approximation of pre-World War II mortality levels in the study community. Though the residents of Baan Tang Chang, as informants have reported, suffered the recurrence of periodic epidemics, and though they lived under conditions of regular crop shortfalls and rudimentary medical care, the community's population continued to grow throughout its first 100 years. If mortality conditions had been particularly adverse in the area, it is unlikely that such growth would have been sustained.

The tremendous improvements in health care, transportation, agriculture, and education that have occurred within just the last 30 years are reflected in mortality rate decline in the genealogical census data. From an average crude death rate of 17.0 for the immediate post-War period of 1946-1951 mortality declined by 43.5 percent to an average of 9.6 for the most recent five year period. As the genealogical mortality data are notably more complete in recent years than in the past, the actual decline is even greater than indicated above. In this section post-War mortality decline will be examined in detail.

In the previous section comparative data from the life history survey was used to demonstrate that even within recent years some amount of first year deaths were omitted during genealogical censusing. It was inferred that some omissions must have also occurred for deaths of other young children in the community. However, the longer individuals survived in the community the more likely were they to be reported. In addition, school enrollment lists provided a means to assist in recovering children who had survived, at least long enough to attend school, which begins at age seven. Life expectation improvements at older ages over the last half century substantiated that adult mortality data were reasonably reliable and complete.

The life table probability of dying, ${}_nq_x$,⁴ measures that portion of the hypothetical cohort which on entering a particular age group will not survive to the end of it. Though related to the age interval life expectation of Table VII.2,⁵ it allows the data to be viewed from a different perspective. Because life tables are constructed separately for males and females, ${}_nq_x$ values may be compared over time to assess changes in age-sex mortality differentials.

To facilitate analysis life table mortality rates have been calculated over broader age groupings than the standard five year groups of the abridged life table. Avoiding the most serious areas of data deficiency, life table mortality rates were computed for two groups, prime adulthood and old age, for the last four decades of community history. The data are presented in Table VII.4. Percents of mortality decline are included.

The life table probability of dying presented in Table VII.4 shows that consistent and substantial mortality reduction has occurred among adult villagers over the last 40 years. Significant and precipitous mortality declines are evident within both age groups for both sexes. Of equal interest are the changes which have occurred in the patterns of

4.
$${}_nq_x = 1 - \frac{l_{x+n}}{l_x}$$

following:

5. The mathematical transformation from ${}_ne_x$ to ${}_nq_x$ is presented in the following:

Given that
$$l_{x+n} = l_x - l_x({}_nq_x)$$

and
$${}_nL_x \approx \left[\frac{l_x + l_{x+n}}{2} \right] \cdot n$$

$${}_nL_x = \left[\frac{l_x + l_x - l_x({}_nq_x)}{2} \right] \cdot n$$

$$= \left[l_x - \frac{1}{2}l_x({}_nq_x) \right] \cdot n$$

$${}_ne_x = \frac{{}_nL_x}{l_x} = \left[1 - \frac{1}{2}{}_nq_x \right] \cdot n$$

Table VII.4 Selected Age Interval Probabilities of Dying from the Genealogical Life Tables

Years (A.D.)	115	145	150	175	30Q15	25Q50	Years (B.C.)
<u>Male</u>							
1937-1946	77341	64969	58360	19721	.160	.662	2480-2489
1947-1956	82049	71689	66913	24084	.126	.640	2490-2499
1957-1966	81259	75639	73097	32434	.069	.556	2500-2509
1967-1976	84575	79994	76963	33213	.054	.568	2510-2519
<u>Female</u>							
1937-1946	85288	60169	56558	14172	.295	.749	2480-2489
1947-1956	76307	65299	61234	34759	.144	.432	2490-2499
1957-1966	83631	77259	73198	39221	.076	.464	2500-2509
1967-1976	83650	78778	75188	53304	.058	.290	2510-2519
<u>Percent Decline by Sex and Age</u>							
				<u>15-45</u>	<u>50-75</u>		
Male				66.3	14.2		
Female				80.3	61.3		

differential mortality between the sexes. In general, while the mortality sex differentials through the prime adult years have become increasingly alike over time, those at old age show increasing divergence. Because these changes provide some interesting insight into the character as well as the cause of recent mortality change in the village community, they are explored at greater depth.

Of particular interest are the markedly high mortality rates experienced by females of childbearing age a generation ago. The female mortality rates 40 years ago were almost twice those of males of the same age. Examination of prime-aged adult mortality data for the previous ten year period, 1927-1936, shows essentially the same pattern. For this period the male probability of dying was .160 compared to the female .250.

The explanation for large male-female mortality differentials before the end of World War II, and their rapid and almost complete disappearance over the last 30 years lies in the substantially greater risks that women faced because of childbearing. Certain features of the Thai situation may have greatly increased these risks. As in many pre-modern agrarian societies, women worked in the fields through the full

term of their pregnancy. Deliveries were at home in the care of traditional midwives who were often unconcerned with modern practices of antiseptic care. For example, a bamboo sliver from house roofing was the preferred instrument for severing the umbilical cord. In the post-natal period, women were ritually required to lie for periods up to one month before a hot roasting fire⁶.

Conditions surrounding village pregnancy and childbirth practices have changed substantially over the last thirty years. Mechanization of agriculture has alleviated to some extent the physical burdens of rice farming. Though most women continue to give birth within their own homes, traditional midwives are being gradually replaced by government-trained mid-wives. The number of post-natal days spent lying by the fire has been reduced by half. On occasion, the hot roasting fire is replaced by a warm brazier.

To villagers the most apparent reason that fewer women die at childbirth now than formerly is that women who experience difficult deliveries in the present time are rapidly sent to nearby hospitals. The first modern doctor to be located within reasonably close proximity of Bam Tang Chang was in 1950. In addition, the water control and transportation improvements which have given villagers quick access to market town medical facilities, have also resulted in an improved nutritional standard, a further hedge against the high risk of childbearing. That changes in maternal mortality have been a principal factor in mortality reductions at this age level is substantiated by cause of death data collected during the genealogical census (see Table V.5). These data show that more than 1 in 20 deaths occurring 30 to 50 years ago were recalled as directly related to the birth of a child. After 1947, the decline has been rapid to an incidence of only 1 out of 64 deaths at present. Obviously respondent reports of maternal mortality do not account for the contributing factor that debilitation as a result of childbearing may have played in making women more susceptible to death from other causes.

6. This post-natal ritual, called yu fai, is discussed in more detail in Chapter IX.

An initial field study impression that there were many more older women than older men in the population is explained by the mortality differentials shown for the older age group. This pattern conforms with world-wide sex mortality differences. McDonald (forthcoming) has explained this pattern in terms of innate biological differences between the sexes: "... under conditions of declining mortality, there is a shift in the distribution of causes of deaths towards those causes, such as the degenerative diseases, which are more influenced by the relatively constant biological difference between men and women". As degenerative diseases extract their highest toll at older ages, mortality sex differentials are correspondingly greater at older ages.

In order to substantiate the validity of the mortality patterns indicated, it is desirable to view these findings within the broader perspective of general demographic knowledge about age and sex patterns of human mortality. A popular approach to the study of mortality in developing nations is to use model life tables such as those constructed by Coale and Demeny (1966). These provide demographers a basis with which to make corrective adjustments in their life tables when they suspect the data to be weak. Even relatively weak data sets may still provide sufficient information about extant mortality patterns that a 'fit' may be made within a particular level of model life table mortality.

The principal problem in the use of model life tables is that being derived from sets of highly reliable data, mostly from European countries, they may not accurately reflect the mortality patterns of the presently less developed countries. As Coale and Demeny have pointed out, however, there is not much opportunity for finding out what the mortality patterns of less developed countries really are. Rather than accept their conclusion that the problem is "essentially unresolvable" (1966: 29), the life table mortality patterns for the genealogical population were examined within the context of their four models. Similarities and dissimilarities that illuminate the patterns of genealogical mortality changes are summarized by comparison with the West model.

It seems a more instructive exercise to use the model life tables in this manner, as a basis for comparison rather than as a basis for adjustment. Adjusting the genealogical data to fit within a particular

model would more likely cover up what was interesting and revealing about the data than bring it out into the open. Though there are admitted weaknesses in the data, the more recent decades appear sufficiently reliable to stand the test of this explorative exercise. My purpose here is to view the data for what they may reveal about mortality patterns in a community undergoing rapid mortality decline.

The mortality levels for the West model life table shown in Table VII.5 were chosen on the basis of expectation of life levels at age ten in the genealogical population. The e_{10} measure was used to avoid the effects of undercounts of deaths occurring in infancy and early childhood. Extrapolations between levels could have been made, but this was thought to be too exacting a measure for the purpose of this exercise.

From Table VII.5 the mortality patterns of the genealogical life table are generally parallel with those of the West model. As life expectancy increases, primarily through steep declines in infant and early childhood mortality, there is also the accompanying pattern of steep declines in prime-aged adult mortality. Because female adult mortality begins at a much higher level than male mortality for the adult years, the decline in female mortality is even more dramatic than that of males. However mortality during childhood has declined much less sharply for the genealogical population. Also, at the oldest ages the pattern of increasingly greater female longevity evident in the West model is even more strongly indicated to have occurred for the genealogical population. The pattern of greater mortality decline for females than males in the prime adult ages is roughly the same for both the genealogical and West model life tables.

In summary, the study community population has experienced spectacular alterations from its regime of traditional mortality patterns. Not only have the declines themselves been precipitous, but within the space of just 30 years some dramatic reversals have occurred. The greater risk that females once faced through the childbearing years has largely been eliminated. The prospects for longer life in the present has been the result of more dramatic and substantial improvement in female than in male mortality. Given the difficulty of getting mortality data for developing areas, the genealogical approach has provided some useful information on the patterns of mortality improvement that have occurred in an area undergoing rapid change. However, because of weaknesses evident

Table VII.5. Comparison of Genealogical Life Table Mortality Rates with West Model Life Tables

<u>Period (A.D.)</u>	<u>Genealogical Population</u>				<u>West</u>					<u>Period (B.E.)</u>
	<u>e₁₀</u>	<u>15^q0</u>	<u>30^q15</u>	<u>25^q50</u>	<u>e₁₀</u>	<u>15^q0</u>	<u>30^q15</u>	<u>25^q50</u>	<u>Level</u>	
1937-1946										2480-2489
Male	52.31	.227	.160	.568	52.16	.180	.171	.635	15	
Female	47.22	.147	.295	.749	47.83	.289	.253	.659	10	
1947-1956										2490-2499
Male	55.98	.180	.126	.640	55.86	.116	.119	.581	18	
Female	58.52	.237	.144	.432	58.72	.099	.102	.487	18	
1957-1966										2500-2509
Male	56.00	.187	.069	.556	55.86	.116	.119	.581	18	
Female	61.08	.164	.076	.464	61.52	.067	.063	.441	20	
1967-1976										2510-2519
Male	57.99	.154	.054	.568	58.46	.076	.085	.540	20	
Female	64.34	.129	.058	.290	64.65	.031	.039	.380	22	

in the genealogical census reports of mortality occurrence, especially for early periods of recovery and at younger ages, there remains considerable uncertainty about the extent of these declines. Though some indication of recent patterns of mortality decline have been provided, the genealogical data are not sufficiently reliable for reconstructing pre-modern mortality conditions that prevailed in the community.

VII.2 Fertility

In Figure VII.3 two computations of genealogically-based crude birth rates are presented - single-year calculations, and rates smoothed by moving averages. While the single-year crude birth rates show little of the five and ten-year age heaping evident for mortality reporting, the fertility levels themselves are cause for scepticism about the data as a reliable reflection of village fertility history. Through the first 60 years the rates, though declining, appear far too high; in contrast, the rates for the last decade appear too low. In the following, fertility data will be examined to ascertain where and why weaknesses occurred during genealogical censusing. In addition, substantive analysis will be conducted where the data appear to reliably reflect fertility history in the study community.

VII.2.1 The Reliability of Genealogical Fertility Data

In Table VII.6 general and total fertility rates computed from the genealogical data are presented. These more refined measures are used to overcome the effects that age structural peculiarities or changes can have on the crude birth rate. Essentially, however, both these measures show the same pattern as that exhibited by the crude birth rate - a high, though generally declining, fertility through 100 years of village history followed by a slight increase beginning some 20 years ago and subsequently a precipitous decline within the most recent years. Thus, if this pattern is a distortion of the study community's actual fertility history, the problem lies within the data itself and not within the techniques applied for measurement.

The fertility rates shown in Table VII.6 for the earliest 25 year period are clearly distorted. While the total fertility rate of 17.6 children per woman passing through the reproductive ages is clearly above human reproductive capacity, the general fertility rate of 265.3 is only

Figure VII.3. Crude Birth Rates from Genealogical Census Data

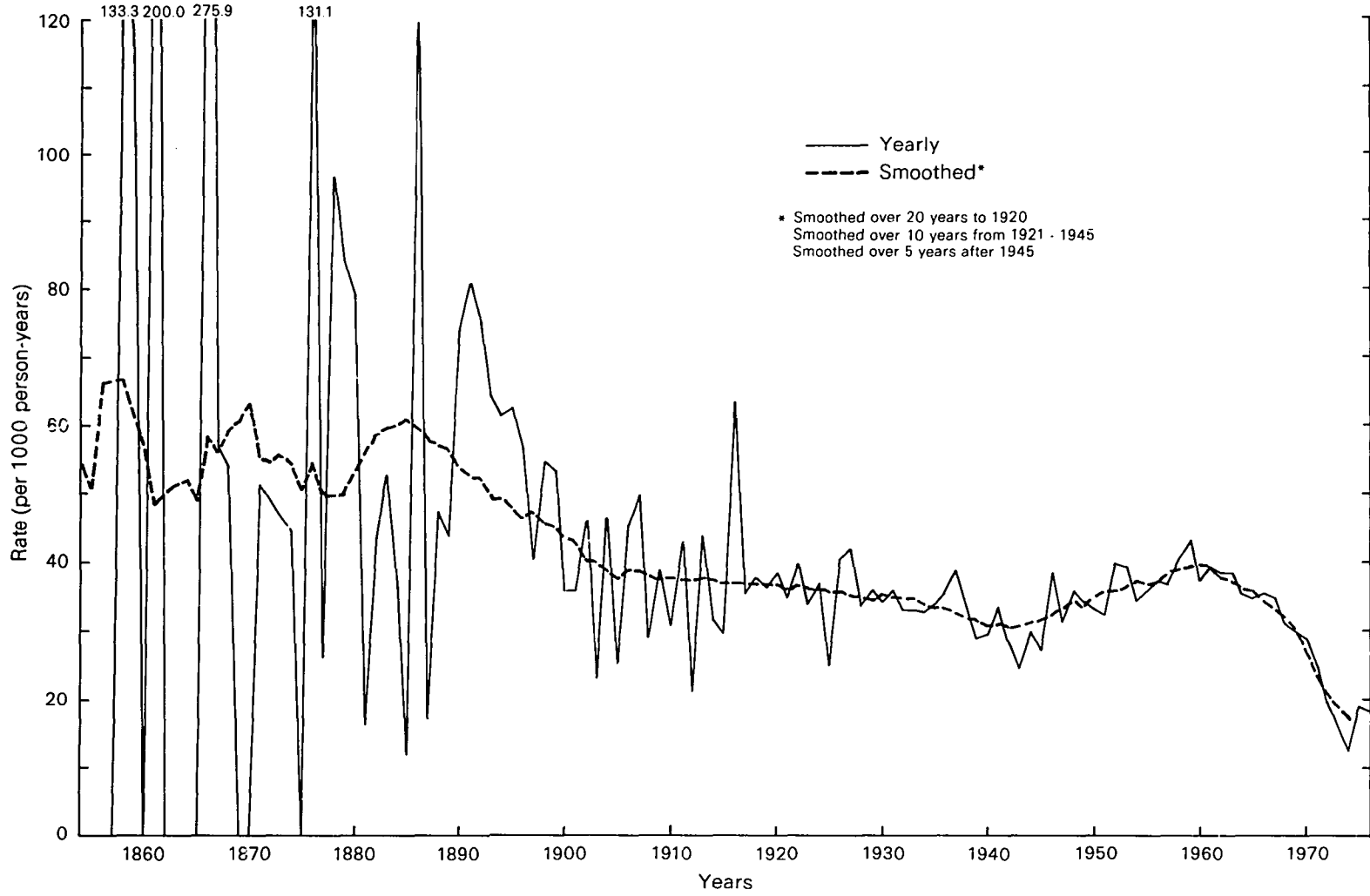


Table VII.6. General and Total Fertility Rates Averaged Over Selected Time Intervals from Genealogical Census Data

Period (A.D.)	General Fertility Rate (per 1000 women)*	Total Fertility Rate (per woman)**	Period (B.E.)
1846- 1870	265.3	17.6	2389- 2413
1871- 1890	209.6	6.5	2414- 2433
1891- 1910	183.8	5.8	2434- 2453
1911- 1930	158.2	4.9	2454- 2473
1931- 1940	140.8	4.6	2474- 2483
1941- 1950	131.5	4.3	2484- 2493
1951- 1960	154.9	4.7	2494- 2503
1961- 1970	162.5	4.9	2504- 2513
1971- 1976	87.9	2.9	2514- 2519

$$* \text{ GFR} = \frac{\text{Births}}{\text{Person-Years lived by Women 15-45}}$$

$$** \text{ TFR} = 5 \sum_{i=15-19}^{i=45-49} \frac{\text{Births to Women}_i}{\text{Person-Years Lived by Women age } i}$$

moderately high. The small number of women present in the population at that time - an average of only two women per year in the reproductive ages - in combination with high levels of omission which occurred have resulted in rates that are unreliable measures of actual fertility behaviour in the population.

After 1870 the rates are at least feasible for what was then a frontier area. However, continuing high levels of omission through at least the first 80 years of genealogical censusing obviously affect the calculation of fertility rates. While evidence of systematic bias towards high fertility is only slight (see Table VI.7), the substantial undercounts which have occurred produce distortion through differential impact upon rate numerators and denominators. In consequence, fertility rate patterns may be more a product of weaknesses in the data than of actual occurrences in fertility.

In the previous section of this chapter, extremely low mortality rates through the 1920s provided an indication that significant omission was occurring among both adults and children who had ever lived in the community. Thus, fertility rates of this period are inflated to the extent that denominators, comprised of females 15-45 years of age, were under-enumerated. Conversely, failure to recover the births of children who died or out-migrated during early childhood results in under-enumeration of fertility rate numerators. For example, infant mortality rates calculated from genealogical census data, even with the up-date provided by life history survey data, were estimated in the previous section to undercount the actual level by as much as 30 percent 30 years ago. Before 1900 infant mortality omission was almost total. Thus, early fertility rate calculations have also been depressed by the numbers of children who were not recovered in the census. For later periods, better recovery of adults who have ever lived in the population may appear as fertility rate decline. Subsequent improvements in genealogical recovery of children in more recent decades may then appear as fertility rate increase. Because of the difficulties imposed by these compensating distortions, neither the trends nor the levels of fertility rates calculated from genealogical census data may be accepted with confidence, especially for the earlier periods.

Because the life history survey data provides a reasonable estimate of what actual infant mortality levels were in the community, it is possible to adjust more recent data on this basis. The rates produced

in column 12 of Table VII.7 are adjusted only for omissions due to infant mortality. Some additional omission of births is likely also to have occurred from failure to recover other children who died or out-migrated during years of early childhood. Thus, actual fertility levels for the community may be assumed to be higher than those shown in Table VII.7. Because omission is likely to have been greater in earlier relative to later periods, the lower fertility of 1937-1946 relative to the previous decade would probably not be changed by further adjustment for omission. Before analyzing these patterns of recent fertility in greater detail, some attention must be given to explaining the unusually low fertility rates shown for the last decade.

Though the declining fertility rates of the most recent years are consistent with the introduction and spread of modern birth control techniques in the study community, the sharpness of the decline requires a sceptical look at the data. Under-enumeration of infants and young children is a frequent shortcoming in censusing developing nation populations. Thus, one explanation, for the rapid decline of fertility rates in the most recent years of genealogical censusing is that women simply forgot to report and/or interviewers neglected to record the presence of the youngest members of the community. This was particularly likely to have occurred for genealogical recovery of children born to women no longer resident in the community. Given the high level of emigration in recent years some proportion of young children out-migrating with their families could have easily gone unreported.

Though local registration data are highly suspect in their own right, community birth records may be compared with the genealogical data set to indicate whether or not fertility has actually declined in recent years. One difference between these two sets of data that is of interest here is that village birth registration is largely de jure while genealogical birth recording was, especially in this recent period, principally de facto. Though not intentional, the operational reality of the local registration system is that villagers who have moved out of the village will often continue to register new births in the village.⁷

7. Particularly will this occur when villagers move to an alien, urban setting, such as Bangkok, where they feel threatened by and unfamiliar with the government bureaucracy. To some extent de jure registration signifies a continuing attachment and perhaps an intention to return to the village.

Table VII.7. Genealogical Fertility Adjustments Based on Life History Infant Mortality Rates

Period (A.D.)	Births in genealogical census (1)	Infant deaths in genealogical census (2)	Assumed infant mortality rate from life history survey data (3)	Estimated under-count of births* (4)	Adjusted births (2+4) (5)	Genealogical population person-years lived (6)	Adjusted total person-years (6) + .25(5)** (7)	Genealogical person-years for females aged 15-45 (8)	Original crude birth rate (9)	Original general fertility rate (10)	Adjusted crude birth rate (5÷7) (11)	Adjusted general fertility rate (5÷8) (12)	Period (B.F.)
1927-1936	462	39	.143	32	494	13290	13298	3065	34.8	150.7	37.1	161.2	2470-2479
1937-1946	494	72	.221	48	542	15875	15887	3788	31.1	127.7	34.1	143.1	2480-2489
1947-1956	641	102	.186	21	662	18156	18161	4482	35.3	145.2	36.5	147.7	2490-2499
1957-1966	770	102	.159	24	794	20393	20399	4566	37.8	168.6	38.9	173.9	2500-2509
1967-1976	458	55	.127	4	462	19265	19266	3999	23.8	114.5	24.0	115.5	2510-2519

* $IMR (Births + x) = Deaths + x$
 $x = \frac{Births (IMR) - Deaths}{1 - IMR}$

** Each infant dying during first year of life is assumed to have contributed one-quarter of a person-year.

In contrast, genealogical interviewers were instructed to be exacting in recording the place of occurrence for demographic events⁸. Thus, some children who appear in the village registers as born in the community do not appear in the de facto records of the genealogical census. Some of them were actually born in the community but were inadvertently omitted from genealogical records because they out-migrated at young ages. Others were actually born outside the community but were registered as if they were born in Baan Tang Chang.

In Table VII.8 data comparing community registration with genealogical census figures are presented. As only six out of the seven villages fell within the boundaries of the government statistical area for which I was able to secure birth registration records, the comparison is limited to just these six villages. However, no significant differences in fertility appeared to exist between these six and the remaining seventh village.

Average crude birth rates⁹ for the ten-year period 1961-1970 for the two data sets are almost exactly equal - 35.2 for the registration data vs. 34.9 for the genealogical data. Minor year-by-year discrepancies result primarily from infant mortality omission differentials and the tendency of out-migrant villagers to continue to register new births in the community. For the most recent six-year period, however, there is considerable divergence between the crude birth rates of the registration system and those of the genealogical census.

The in-migration figures presented in Table VII.9 point to part of the reason for discrepancy between the two data sets. Though the base population remains relatively constant over the span of years listed, there

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8. Obviously, there was some slippage from this de facto ideal the further back in time events took place. Children born 30 years ago during periods when villagers were temporarily living elsewhere would likely be recorded as being born in the community. However, generally low levels of villager mobility during earlier periods would have minimized opportunities for misreporting of this kind to occur.
 9. Person-years-lived compiled from the genealogical census have been used as the denominator for computing these crude birth rates. Though there are obvious difficulties which arise in using a de facto population base as the denominator for a de jure birth register, for purposes of this comparison the problem is not significant.

Table VII.8. Comparison of Genealogical Census with Birth Registration Data

Period (A.D.)	Genealogical Census Data				Genealogical Census Data				Person- Years Vill.1-6	Birth Registration Data				Percent Difference $\left(\frac{9-6}{9}\right)$	Period (B.E.)		
	All Villages		Villages 1-6		Villages 1-6		Villages 1-6			Male	Female	CBR	Male			Female	CBR
	Births		Births		Births		Births										
	Male (1)	Female (2)	Male (4)	Female (5)	Male (3)	Female (6)	Male (7)	Female (8)		CBR (9)							
1961	35	45	28	38	.391	.393	1680.83	32	32	.381	32	32	.381	-3.1	2504		
1962	39	39	33	30	.383	.377	1669.22	27	25	.312	27	25	.312	-20.8	2505		
1963	38	41	31	32	.382	.372	1692.41	33	29	.366	33	29	.366	-1.6	2506		
1964	40	33	32	32	.353	.377	1697.16	34	27	.359	34	27	.359	-5.0	2507		
1965	42	30	34	23	.348	.335	1703.25	34	30	.376	34	30	.376	+10.9	2508		
1966	36	37	32	32	.354	.377	1699.84	27	29	.329	27	29	.329	-14.5	2509		
1967	42	29	35	21	.348	.331	1694.59	37	31	.401	37	31	.401	+17.4	2510		
1968	29	35	23	31	.313	.318	1698.92	30	31	.359	30	31	.359	+11.4	2511		
1969	31	29	28	24	.296	.310	1679.83	29	23	.310	29	23	.310	0.0	2512		
1970	24	34	21	29	.290	.300	1665.66	28	26	.324	28	26	.324	+7.4	2513		
1971	31	19	25	16	.254	.247	1658.75	26	18	.265	26	18	.265	+6.8	2514		
1972	19	19	17	17	.197	.208	1632.41	25	26	.312	25	26	.312	+33.3	2515		
1973	12	18	12	15	.162	.171	1576.67	25	20	.348	25	20	.348	+50.9	2516		
1974	7	16	6	13	.132	.126	1504.84	16	20	.239	16	20	.239	+47.3	2517		
1975	22	11	16	10	.200	.179	1454.25	13	20	.227	13	20	.227	+21.1	2518		
1976	16	15	13	14	.194	.191	1410.83	20	20	.284	20	20	.284	+32.7	2519		

Table VII.9. In-Migration of Infants and Children for Villages 1 to 6

Period (A.D.)	Infants 0-1	Children 1-4	Total 0-4	Person- Years 0-4	Period (B.E.)
1961	0	1	1	319.50	2504
1962	0	0	0	325.75	2505
1963	0	3	3	334.25	2506
1964	0	3	3	333.00	2507
1965	1	0	1	326.50	2508
1966	0	1	1	318.00	2509
1967	0	1	1	309.50	2510
1968	1	3	4	300.75	2511
1969	0	3	3	292.75	2512
1970	1	1	2	285.00	2513
1971	1	4	5	268.75	2514
1972	0	4	4	243.25	2515
1973	0	2	2	215.00	2516
1974	1	4	5	185.25	2517
1975	1	5	6	160.25	2518
1976	1	1	2	141.50	2519

Age-Specific In-Migration Rates for Children Aged 0-4 for
Selected Periods

Period (A.D.)	Total 0-4	Person- Years 0-4	Rate per 100	Period (B.E.)
1961-1965	8	1639	.5	2504-2508
1966-1970	12	1506	.8	2509-2513
1971-1976	24	1214	1.9	2514-2519

is a consistent increase in the numbers of children migrating into the village. Clearly this results not from new families coming to settle in the community, but rather from previously resident families who are returning with children born during their periods of absence. In particular, the number of children migrating into the village in the most recent six-year period more than doubles that of child in-migrants of previous periods. In consequence, it is inferred that discrepancies between the two data sets are partly accounted for by the increasing mobility of villagers. De jure recording for registration purposes includes these infant and young children as born in the village; de facto recording in the genealogical census excludes them. Conversely, increasing limits of out-migration in recent years has proven problematic for genealogical birth recording. While out-migrating families have likely registered their children in the community, some number of these have been omitted during genealogical recall.

Though understated by registration data and overstated by genealogical birth omission, some amount of fertility decline has obviously occurred in the study community. To provide a more accurate picture of how much decline has occurred, as well to provide an additional basis for appraising the reliability of genealogical-based fertility data, total fertility rates from the life history data set were calculated.

In Table VII.10 age specific and total fertility rates computed from both genealogical and life history data are shown for the last half century. The higher levels of the life history rates are expected and explicable - higher omission during genealogical recall, particularly because of deaths and out-migrations of infants and young children, has produced in turn systematic undercounts of births¹⁰. However, even the presence of similar patterns within each of the data sets does not substantiate the reliability of genealogical fertility data. The late peaks in age specific fertility and the parallel rises and falls of total fertility rates overtime are more likely the result of overlap between the data sets than cause for independent affirmation of data reliability. In

10. An alternative explanation is that there have been actual fertility differences between women in the separate data sets. As women who have left the population through either death or emigration are included in genealogical census data but excluded from life history survey data, fertility level differences between the data sets may reflect real fertility differentials. Women who have already died or emigrated may have different fertility levels than those who have survived. Because data omission appeared the greater source of discrepancy between the data sets, analysis was not conducted to determine the extent and direction of such differentials.

Table VII.10. Genealogical and Life History Based Total and Age-Specific Fertility Rates

<u>I. Genealogical Rates</u>									
Years (A.D.)	Age-Specific Rates							Total Fertility Rate	Years (B.E.)
	15-19	20-24	25-29	30-34	35-39	40-44	45-49		
1921-1930	.0258	.1472	.2184	.2143	.2095	.1308	.0362	4.91	2464-2473
1931-1940	.0513	.1579	.2122	.1987	.1502	.0925	.0437	4.58	2474-2483
1941-1950	.0230	.1345	.1909	.2284	.1870	.0686	.0139	4.25	2484-2493
1951-1960	.0441	.1451	.2307	.2306	.1794	.0894	.0184	4.71	2494-2503
1961-1970	.0349	.1785	.2370	.2278	.2102	.0985	.0115	4.99	2504-2513
1971-1976	.0212	.1753	.1167	.1488	.1521	.0660	.0000	2.90	2514-2519
<u>II. Life History Rates</u>									
Years (A.D.)	Age-Specific Rates							Total Fertility Rate	Years (B.E.)
	15-19	20-24	25-29	30-34	35-39	40-44	45-49		
1921-1930	.0405	.1268	.2203	.2500	.2368	.1667	.0000	5.21	2464-2473
1931-1940	.0400	.1929	.2601	.2042	.2203	.0909	.0000	5.04	2474-2483
1941-1950	.0255	.1955	.2571	.2756	.1561	.0704	.0000	4.90	2484-2493
1951-1960	.0468	.1915	.2863	.2764	.1943	.0787	.0000	5.36	2494-2503
1961-1970	.0377	.2037	.2739	.2515	.2412	.1146	.0143	5.68	2504-2513
1971-1976	.0321	.1122	.1341	.1781	.1475	.0772	.0033	3.42	2514-2519

consequence, the analysis of recent fertility undertaken in the remainder of this section, relies more heavily on life history fertility data than on data from the genealogical census.

VII.2.2 A Brief History of Fertility in Baan Tang Chang

Because the genealogical fertility rates are especially unreliable for early periods and because life history data do not stretch far enough into the past, it is difficult to conclude what pre-modern fertility levels were for the study community. Nevertheless, it may be inferred from other evidence that fertility levels were not extremely high during early periods of community history. Relatively high levels of prime-aged adult mortality, including particularly a high incidence of maternal mortality, were documented for the community of 30 years ago. In the more distant past, adult mortality is likely to have been higher still. Along with infecundity, sub-fecundity, and sterility, high levels of adult mortality operate to keep fertility levels down.

More conclusive evidence of relatively low fertility levels in the village past is provided by indication that village women did not begin childbearing until relatively late ages. It has already been shown that villagers reported birth years in genealogical censusing with high accuracy (see Table VI.2) and that genealogical data was not substantially biased toward either high or low parity women (see Table VI.7). Thus, the data used to compute age of mother at first birth are presumed to be reliable. In Table VII.11 it can be seen that childbearing began at relatively older ages throughout the course of recovered village history. This finding is consistent with the relatively late age of marriage patterns shown by life history data in Table VII.12. Thus, late childbearing has been an additional factor that operated to keep overall fertility levels down.

Contemporary villagers frequently expressed a feeling that couples should not marry until they were old enough to shoulder the responsibilities of raising a family. Marriage occurring in the early to mid-twenties was so generally favoured and teenage marriages so decried that relatively late marriage may be seen as an important social norm. Traditionally, two mechanisms have operated to ensure that young villagers conformed to this norm. The first is that a brideprice of not

Table VII.11. Average Age of Mother at Birth of First Child from
Genealogical Census Data

Period of First Child's Birth (A.D.)	No. of First- Born Children	Average Age of Mother	Period of First Child's Birth (B.E.)
1877-1886	3	25.3	2420-2429
1887-1896	18	25.7	2430-2439
1897-1906	9	23.2	2440-2449
1907-1916	33	23.2	2450-2459
1917-1926	49	24.8	2460-2469
1927-1936	53	24.3	2470-2479
1937-1946	61	24.3	2480-2489
1947-1956	96	24.8	2490-2499
1957-1966	83	23.8	2500-2509
1967-1976	52	24.4	2510-2519

Table VII.12. Life History Average Age of Marriage and Percent Never Married by Cohort

Cohort (A.D.)	Age at Time of Survey	Males			Females			Cohort (B.E.)
		Avg. Age of Marriage	% Never Married	N	Avg. Age of Marriage	% Never Married	N	
1882-1896	80-95	25.6	0.0	7	25.5	0.0	14	2425-2439
1897-1911	65-79	25.3	9.1	24	22.7	10.0	44	2440-2454
1912-1916	60-64	25.3	10.3	29	22.6	4.2	24	2455-2459
1917-1921	55-59	26.1	3.3	30	22.2	10.5	38	2460-2464
1922-1926	50-54	25.0	6.5	31	23.5	0.0	46	2465-2469
1927-1931	45-49	24.9	6.1	33	22.3	12.2	49	2470-2474
1932-1936	40-44	23.8	0.0	40	21.5	16.1	56	2475-2479
1937-1941	35-39	23.9	9.7	31	21.5	14.0	43	2480-2484
1942-1946	30-34	24.0	7.4	27	21.0	21.9	32	2485-2489
1947-1951	25-29	22.5	30.8	26	20.9	50.0	50	2490-2494
1952-1956	20-24	21.4	79.5	44	19.1	63.2	57	2495-2499
1957-1958	18-19	-	100.0	21	16.0	91.3	23	2500-2501

insignificant amounts had to be negotiated and paid before a wedding could take place¹¹. Though it varied whether parents or their marrying sons bore principal responsibility for gathering the proper amount, it is clear that in most cases it took some time to do so. The second mechanism is related to the tradition of young male entry into the monkhood (buat phra). As this is not usually done until a man is in his early twenties, it served effectively to delay male age of marriage. From the scattergram of Figure VII.4 showing husband to wife birth year differentials, it is seen that husbands are usually only slightly older than wives. The exceptions are usually of second and third marriages occurring later in life. In these cases men, and not infrequently women, sometimes marry people several years their junior.

The patterns of age specific fertility shown in life history data over more than 50 years of community history reflect the impact that late marriage has had on village fertility. In Figure VII.5 age specific fertility rates show a consistently late peak and persistently high levels of fertility through the older childbearing ages. In all except one ten year period, fertility peaks during the ages 25-29. In the 1941-1950 decade, an exceptional period in other ways as well, the peak occurs even later, between the ages of 30 and 34.

To place Baan Tang Chang fertility patterns in national perspective, age-specific fertility rates from the 1961-1970 decade are presented with Central Plain and national level figures for the Thai population during the same period of time (Figure VII.6). Rather than adjusting genealogical data for the effects of infant mortality omission, the more reliable data from the life history survey were used in making these comparisons.

While showing the same overall patterns, the life history rates fall directly between the Central Plain and national level figures. As the Central Plain figures are lowered by the inclusion of Bangkok data, it is no surprise that Baan Tang Chang figures are somewhat higher. Similarly, a slightly lower fertility than national data, which includes other less developed regions of the country, is also not unexpected.

11. Brideprice payment also appears to act as a means to promote marriages between families of similar economic levels.

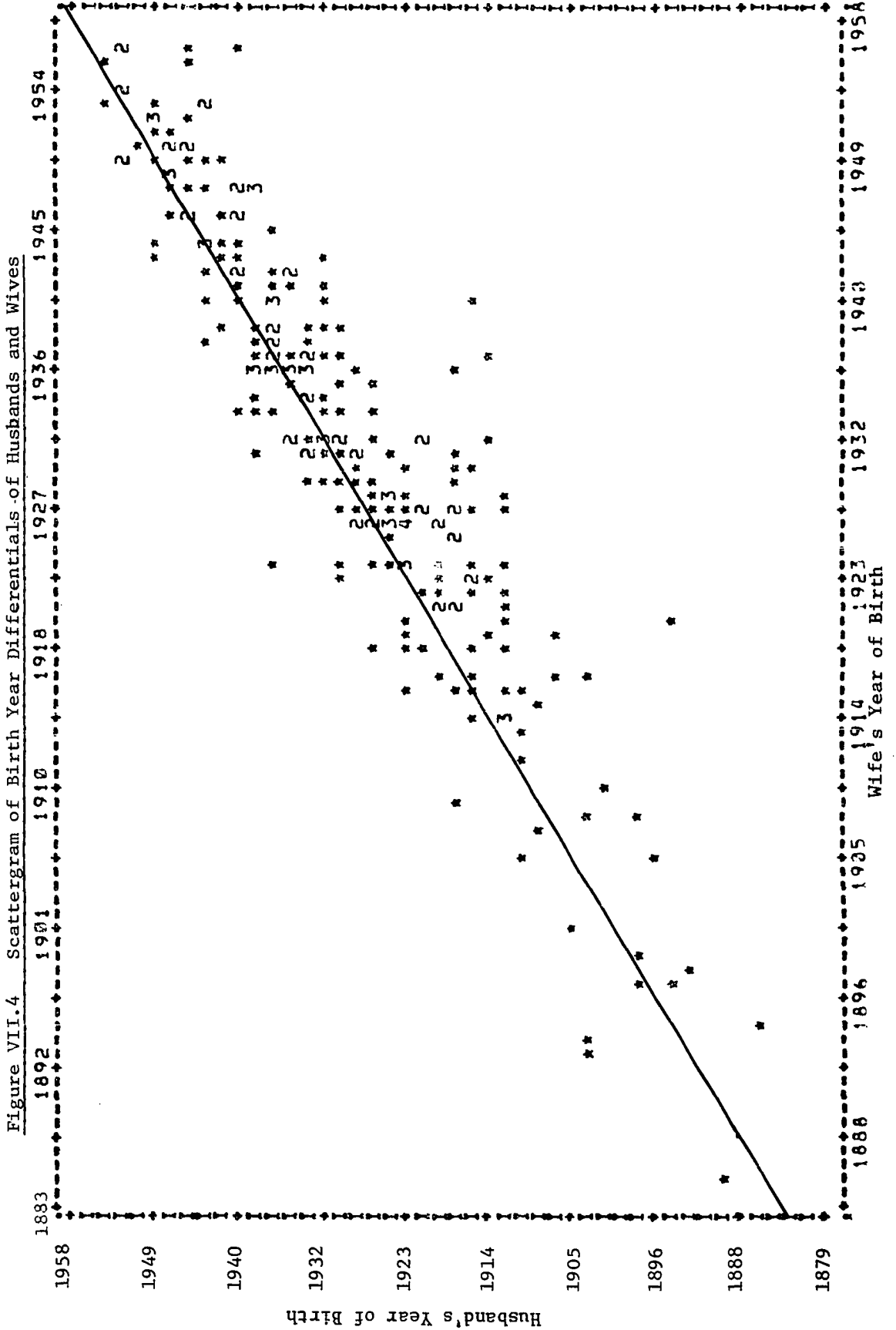


Figure VII.5

Life History Age Specific Fertility

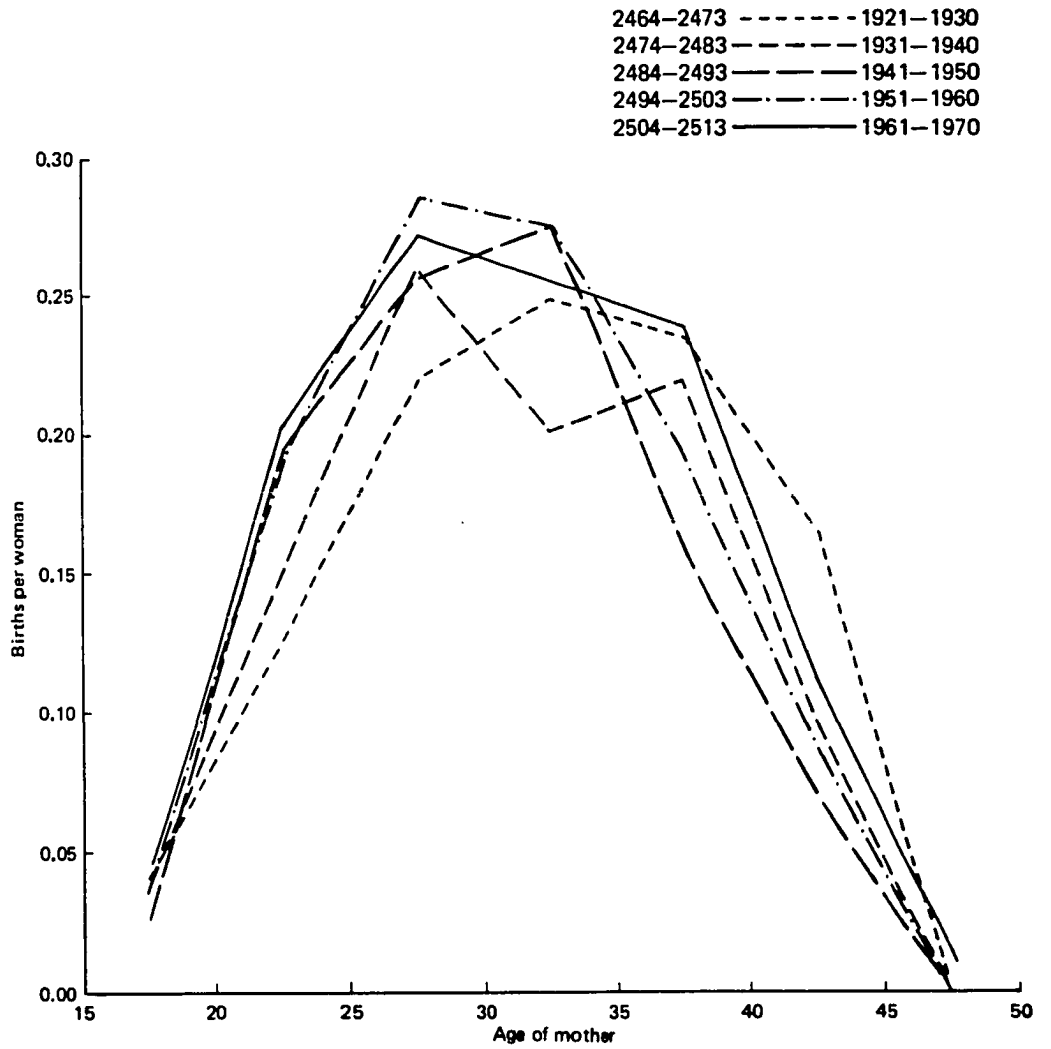


Figure VII.6

Age Specific Fertility in National and Regional Perspective

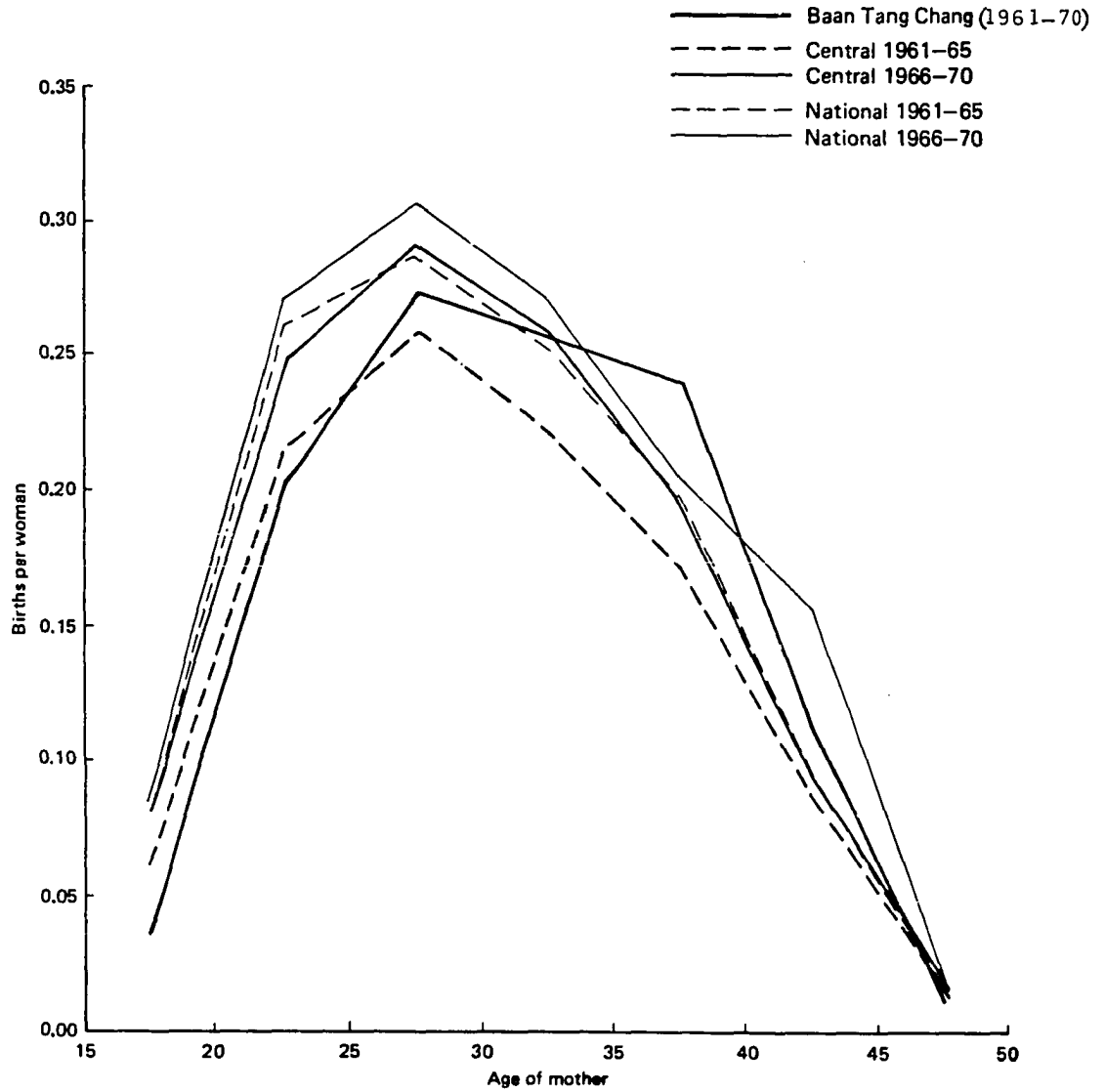
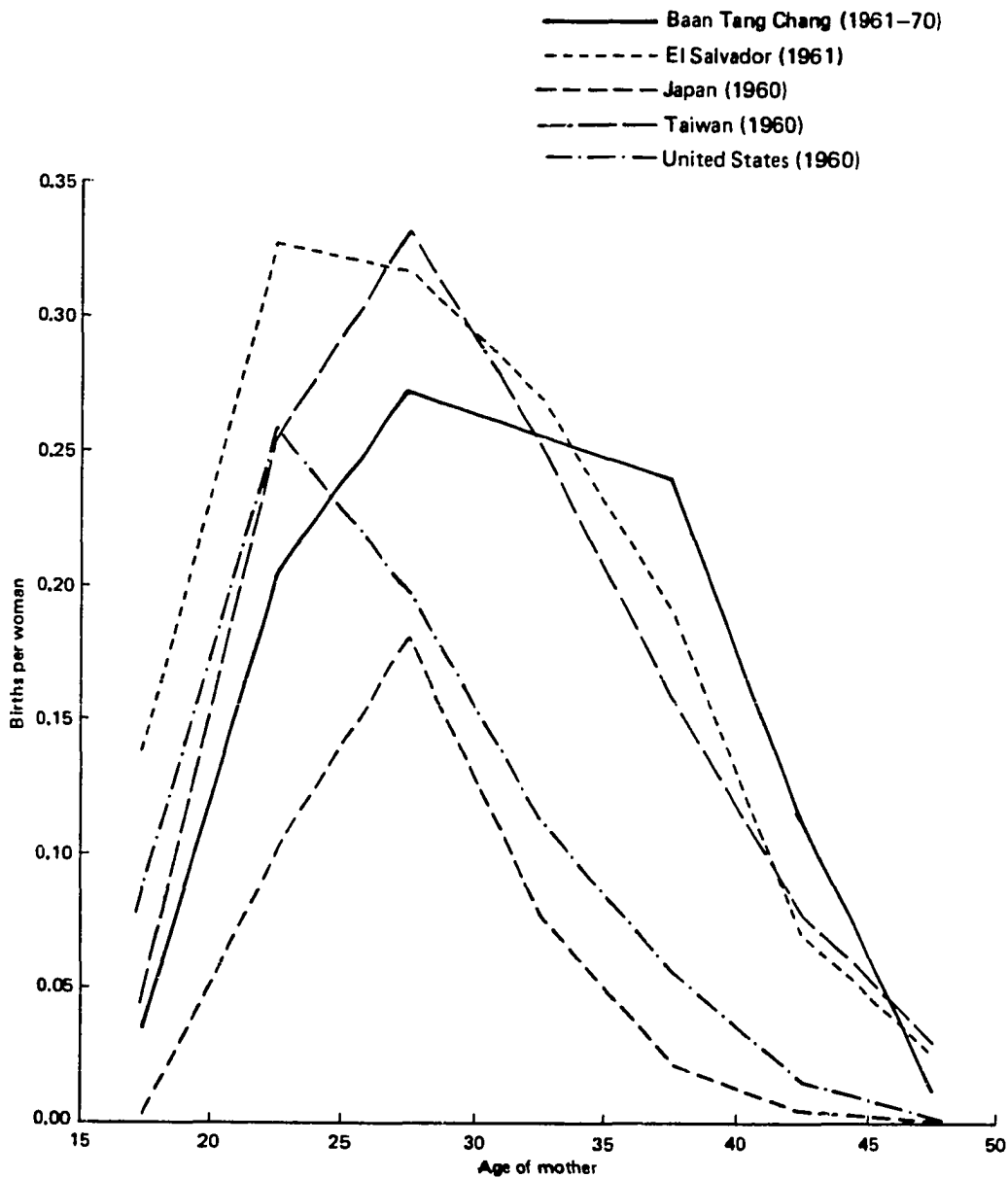


Figure VII.7

Age Specific Birth Rates for Various Countries* and the Study Community



* Source: Shryock and Siegel,
1976:279

Table VII.13. Total Fertility Rates by Five-Year Periods from Genealogical Census and Life History Survey Data

Year (A.D.)	Genealogical Census TFR	Life History Survey TFR	Year (B.E.)
1926-1930	5.06	5.93	2469-2473
1931-1935	4.67	5.35	2474-2478
1936-1940	4.47	4.85	2479-2483
1941-1945	3.88	4.16	2484-2488
1946-1950	4.58	5.44	2489-2493
1951-1955	4.53	5.14	2494-2498
1956-1960	4.90	5.50	2499-2503
1961-1965	5.08	5.86	2504-2508
1966-1970	4.87	5.46	2509-2513
1971-1975	2.89	3.60	2514-2518

To provide a broader comparative context, study community data may also be shown against comparable data from other countries (Figure VII.7). The age-specific fertility pattern of the study community is most similar to that of the late marrying, non-birth-controlling Taiwanese of 1956 and notably different from the similarly high but early fertility pattern of El Salvador. The early peaking U.S. and later peaking Japanese fertility patterns both show the rapid decline in later age groups that is most indicative of high birth control practice levels, in obvious contrast to the village Thai pattern.

Though it is possible for relatively late peaks in childbearing to result from control being exercised to delay births within marriage, conditions within the study community indicate that this was not the case. Until recently there were no viable and easily used methods to delay fertility once marriage had occurred. Rather, women in village society were highly motivated to become pregnant as soon as possible after marriage. By giving birth to a first child and subsequently going through the "lying by fire" post-natal ritual, a village woman becomes recognizably "mature" (suk). Because of late marriage, age specific fertility rates peaked at relatively late ages.

While the age patterns of fertility have been consistent over 50 years of village history, some interesting changes in fertility levels have occurred during this time. To more carefully examine changing fertility levels, total fertility rates from both data sets computed over 5 year periods are presented in Table VII.13. In both sets a sharp drop in fertility may be observed for the years 1941-1945. If this short-term decline actually occurred, an effort should be made to explain both the reasons and means for effecting such behaviour.

The period of decline coincides with World War II. During this period, Japanese troops occupied Thailand and ran the country through a puppet Thai government. On a national level, international trade was disrupted. Coming on the heels of world wide Depression, war-time inflation was severe and the reduction in yearly rice exports drastic (see Ingram, 1971: 38-40). The result locally was that the bottom fell out of the rice market¹². Besides a shortage of cash, villagers also felt the short-

12. In areas where Japanese troops were bivouacked, they had the potential of being a positive stimulus to the local economy. As one northern Central Plains businessman recalled, the local market boomed because the Japanese were willing to pay very high prices for locally grown food. Japanese soldiers, however, were never seen in the vicinity of Baan Tang Chang.

age of several consumer goods, such as lantern oil and cloth, to which they had become accustomed. In consequence, they returned for the duration of the War to a more subsistent and self-sufficient level of existence.

Though Japanese troops never came to Baan Tang Chang, psychologically at least their presence was no less felt. It was rumoured, for example, that in a province to the west of the study community¹³ the schools had all closed because most of the teachers had fled to the mountains to join guerilla troops. Towards the end of the War, the sounds of Allied bombers on regular bombing runs to Bangkok could have only had a very disquieting effect on villagers who could do nothing to control the destiny of these greater forces.

In such circumstances, it would not be unusual for people to be somewhat less than favourably disposed towards bringing a child into the world. What is surprising is that rural, uneducated villagers far removed from what was then the mainstreamp of development could have done so. Abortion, coitus interruptus, abstinence, and marital postponement could all have been used to control fertility. Evidence which suggests that it was not villagers of purely Thai origin who exercised the most control over fertility during this period, but rather their Chinese-Thai neighbours is presented in Appendix C.

In the post-War period, fertility levels in the village, as throughout much of the world, showed a significant increase. An expanding economy and improving health conditions appear the primary factors responsible for producing a peak total fertility level of 5.86 for the 1961-1965 period. The substantial fertility decline that occurs after 1970 is consonant with the introduction of family planning services and will be discussed in that context in the next chapter.

VII.3 Migration

Like any other census, the genealogical census provides only limited data about mobility patterns. Permanent and one-way movements of villagers were established by eliciting places of birth and death, and

13. This province is where the famous bridge over the River Kwai was built by prisoners-of-war.

the usual place of mid-life residence for each person recovered during the census. Dates of migration into and out of the study community were collected to provide a basis for measuring the magnitude and flow of movements over time. In Figure VII.8, rates of in and out-migration for the study community are presented in raw and smoothed form.

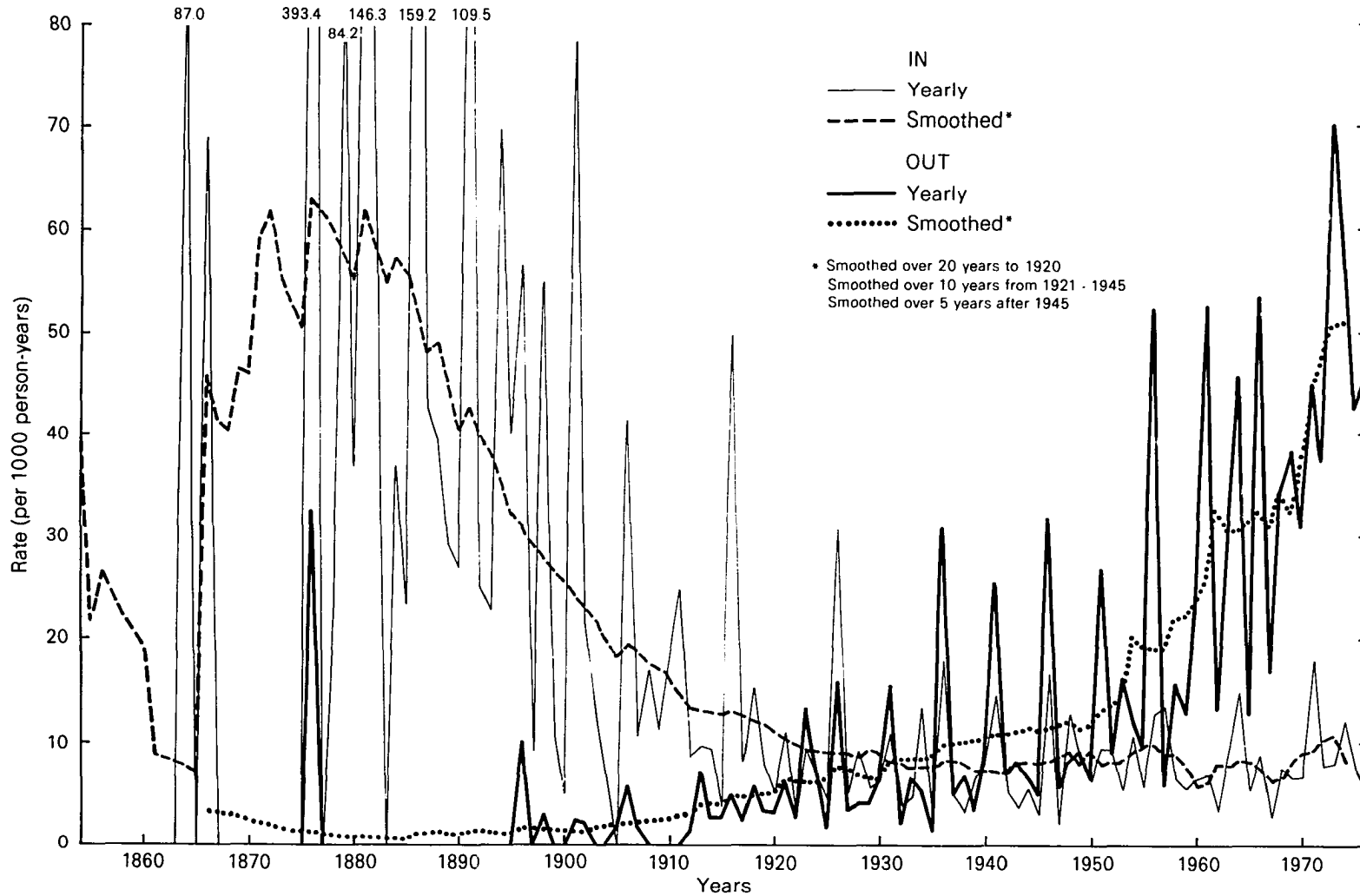
The genealogical migration data are supplemented by detailed mobility histories collected as part of the life history survey. As researchers both in Thailand and other areas (e.g. Lefferts, 1975; Goldstein, 1978; Chapman, 1971; Hugo, 1978; Gould and Prothero, 1974) have found, the more attention researchers give to mobility the more likely are they to discover that dynamic population flows often typify areas previously characterized as rural and sedentary. In this section, patterns of village mobility are considered within both genealogical and life history data sets. The section is introduced by examining the reliability of the migration data collected. This is followed by a brief analysis of major migration patterns in the community.

VII.3.1 The Reliability of Migration Data

While the high levels of in-migration for the first 50 years of community history shown in Figure VII.8 reveal an expected pattern of frontier settlement, one would suspect that some amount of out-migration also occurred. Surely, greater numbers of early settlers than indicated here - only one villager was recorded to have emigrated from the community during its first 50 years - must have abandoned the community after a time to return to their homes or to move on elsewhere. As with the recovery of mortality in early periods of village history, some amount of omission has occurred because individuals did not stay in the community long enough to be remembered. Similarly, it is likely that throughout village history entire families, sometimes encompassing several households, have moved together from the community. Though former neighbours could be relied upon to provide some information on such families in more recent periods, the further back in time the more likely that out-migrants leaving no genealogical or other trace were omitted from the census.¹⁴

14. The possibility of systematic bias towards high fertility in genealogical data has a possible counterpart in systematic bias towards low mobility families. Those who leave few or no descendants in the community through either low fertility or high mobility are less likely to be recovered. For most recent years, however, both written records and evidence of former household sites provided the means to recover some families that may otherwise have been lost to a strictly genealogical approach.

Figure VII.5. Crude In- and Out-Migration Rates from Genealogical Census Data



The effects of incomplete data upon migration rates are similar to those already discussed with regard to mortality and fertility rates. Omission of out-migrants results in out-migration rates that are too low. As with mortality in early periods, out-migrant undercounts mean that some amount of population underenumeration has occurred. Thus, in-migration rates are inflated by the amount of underenumeration occurring in the denominator.

Unlike the situation with mortality and fertility, there are no ready guidelines that may be applied to test the feasibility of genealogical migration rates. While the biological limits of reproduction and the environmental likelihood of high mortality were used as touchstones to check genealogical mortality and fertility levels, the movement of people is relatively independent of such conditions. For instance, while modern transportation developments often facilitate high rates of movement, high mobility may also occur under very primitive conditions, as for example among nomadic groups. Nevertheless, it is possible to judge genealogical migration levels against a standard of what is likely to have occurred at different phases of the community's development. The data in Table VII.14 are presented for this purpose.

As it is not possible to estimate how much omission has occurred during the early periods of genealogical census data, the computed rates do not reliably indicate levels of actual occurrence. However, it is clear that the net effect of migration was to contribute substantially to population growth in what was then a frontier area. During the first 50 years of settlement almost as many migrants into the community as births within it were reported. Over the last 75 years in-migration has contributed decreasingly smaller amounts to village population growth.

As long as community population remained small, there existed sufficient resources to attract people to the area. Through the early 1900s when the population averaged only 600 people, the data show a reasonable pattern of far more in-migration than out-migration. With continued population increase, in-migration declines and out-migration increases. For a time it appears a balance was struck between the two. In the post-World War II period of continued population increase and general economic expansion, opportunities that lie outside the village became greater, more attractive, and more accessible. Hence, the sudden jump to high rates of out over in-migration appears an entirely likely development.

Table VII.14. Genealogical Census Reports and Crude Rates of Occurrence
(per 1000 person-years lived) for In- and Out-Migration

Period (A.D.)	In-Migration		Out-Migration		Average Population Per Year	Period (B.E.)
	<u>N</u>	<u>Rate</u>	<u>N</u>	<u>Rate</u>		
1846- 1895	133	49.9	1	0.4	50	2389- 2438
1896- 1920	268	17.6	38	2.5	595	2439- 2463
1921- 1945	263	7.7	276	8.1	1343	2464- 2488
1946- 1955	155	8.7	238	13.3	1773	2489- 2498
1956- 1965	169	8.3	532	26.3	2017	2500- 2508
1966- 1975	166	8.5	832	42.4	1982	2510- 2518

In the life history survey only currently resident adult villagers were interviewed. While the resulting data set is much smaller than the genealogical census, it contains far more detail. In collecting mobility histories, for example, every place the respondent had lived during his lifetime was recorded. Special attention was also given to seasonal migration patterns which are of growing importance in the village community. Though there are no standards against which data completeness may be measured, conducting the survey within the matrix format appeared to produce highly reliable results.

VII.3.2 Change and Persistence in Community Migration History

Age and sex-specific migration rates presented in Table VII.15 provide the basis for a brief overview of migration patterns in the study community. High levels of in-migration during the early years of settlement have given way to high levels of out-migration in the most recent period. In the interim, when the community was no longer an isolated frontier region but not yet within easy transport reach of more densely settled areas, migration levels were low and largely compensatory. Movement in and out of the community of new marriage partners from neighbouring villages appears to have been and continues to be an important migration pattern in the community. Once, however, the population of Baan Tang Chang became sufficiently large, some proportion of outward moves followed a traditional pattern of the younger generation hiving off in search of their own opportunity. In the years prior to World War II, out-migrants drifted, for the most part, further across the Central Plains in search of land. In the post-War era the new opportunities created by transportation improvements and a burgeoning economy provided the means and motivation for attracting villagers to more distant and different regions (see Table V.3). Closer examination of age and sex differentials which characterize patterns of villager mobility yields additional features of change and persistence in community migration history.

Throughout the community's long history, greater movement has occurred among young adults than for any other comparable age group in the population. Similarly, within this age group particularly, but at all other ages as well, males have moved with relatively greater frequency than have females. The data in Table VII.15 demonstrates the strength and consistency of these differentials throughout village history.

Table VII.15. Age- and Sex-Specific In- and Out-Migration Rates (per 100 Person-Years Lived) for the Genealogical Population

A.D. Year	B.E.	Males				Total Person-Years Lived	Females				Total Person-Years Lived
		0-15	15-29	30-50	50+		0-15	15-29	30-350	50+	
<u>1887-1896 (2430-2439)</u>											
	In-migrants	.88	12.97	7.46	12.50	969	2.23	10.76	1.45	9.52	974
	Out-migrants	.00	.39	.00	.00		.00	.34	.48	.00	
<u>1897-1906 (2440-2449)</u>											
	In-migrants	.81	6.82	1.73	3.69	2148	.58	6.11	.60	4.94	2185
	Out-migrants	.00	.64	.00	.00		.29	.17	.00	.00	
<u>1907-1916 (2450-2459)</u>											
	In-migrants	.87	4.24	1.75	.81	3450	.78	2.43	.99	1.13	3474
	Out-migrants	.15	.83	.12	.00		.07	.30	.00	.00	
<u>1917-1926 (2460-2469)</u>											
	In-migrants	.32	2.57	1.42	.00	4944	.33	2.24	.63	.00	5190
	Out-migrants	.48	1.51	.92	.00		.28	.68	.45	.42	
<u>1927-1936 (2470-2479)</u>											
	In-migrants	.37	1.81	.78	.13	6440	.25	2.25	.53	.00	6852
	Out-migrants	.45	1.69	1.04	.78		.14	1.63	.73	.40	
<u>1937-1946 (2480-2489)</u>											
	In-migrants	.49	1.86	1.09	.00	7645	.25	.97	.60	.00	8232
	Out-migrants	.73	2.46	1.04	1.17		.47	1.48	.77	.80	
<u>1947-1956 (2490-2499)</u>											
	In-migrants	.44	2.78	.77	.00	8810	.47	1.11	.43	.08	9347
	Out-migrants	1.04	3.37	2.22	.33		.68	2.44	1.01	.96	
<u>1957-1966 (2500-2509)</u>											
	In-migrants	.71	1.90	.65	.29	9858	.64	1.25	.51	.07	10536
	Out-migrants	1.99	5.29	2.78	1.53		1.78	3.94	2.55	1.44	
<u>1967-1976 (2510-2519)</u>											
	In-migrants	.88	1.29	.83	.29	9098	1.06	1.00	.39	.24	10169
	Out-migrants	3.14	9.84	4.84	2.54		2.57	6.95	2.66	2.65	

While Central Thai villagers have been described as highly individualistic, in mobility behaviour they sometimes demonstrate a sense of cooperation and interdependence. Not only are relatives frequently an important component of the decision where one should go, but often it is not individuals but entire families that are on the move. Both the eldest and the youngest migrants are more likely to have moved together with their families than they are to have moved independently of them. Thus, high levels of elderly in-migration recorded for the earliest years of community history and increasingly high levels of childhood out-migration in the most recent periods are not without significance. An early pattern of frontier family settlement into the community apparently has its modern counterpart in a growing trend towards family relocation out of the community.

Higher rates of mobility among young adults particularly and males generally are a constant feature throughout community migration history. This prevalence of age-sex differentials provides substantive, if circumstantial, evidence that a significant proportion of moves were always being made by individuals rather than groups. To more carefully examine the dimensions of age and sex migration differentials, as well as to provide data in greater detail for analyzing the more recent period of rapid change, age and sex-specific migration rates are presented in Table VII.16 for villagers 15 to 49 years of age over the last four decades of community history.

The data in Table VII.16 present a general picture of what happens to an isolated rural population increasingly exposed to the transportation improvements and economic developments that come with modernization - movement out of the village reaches unprecedentedly high levels. Within just the last 20 years substantial increases in out-migration have occurred within nearly every five-year age group. For example, male and female out-migration rates have more than doubled at every age during the period of post-War development. Of equal interest, however, is the persistence of some patterns of migration even through this period of extremely rapid change. For example, the highest levels of in and out-migration for both sexes occur regularly throughout this forty-year period at the 20-24 age group. Secondary peaks occur frequently at the 25-29 age group for males, and the 15-19 age group for females. Proximity between these peak levels and the ages at which village men and women usually marry (see Table VII.12) directs attention to the possible

Table VII.16. Age- and Sex-Specific In- and Out-Migration Rates for Selected Age Groups and Time Periods

Period (A.D.)	In-Migration Rates (Per 100 Person-years Lived)							Period (B.E.)
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
1937-1946								2480-2489
Male	.26	2.68	3.11	2.09	1.23	.67	.00	
Female	.76	1.51	.62	1.00	.66	.43	.25	
1947-1956								2490-2499
Male	1.12	4.33	3.17	.93	1.11	.67	.23	
Female	.49	1.57	1.34	.58	.35	.71	.00	
1957-1966								2500-2509
Male	1.19	2.69	1.89	1.26	.54	.19	.46	
Female	1.26	1.75	.74	.75	.44	.67	.00	
1967-1976								2510-2519
Male	.56	2.25	1.50	2.05	.61	.23	.26	
Female	.96	1.29	.70	.70	.16	.33	.38	
Period (A.D.)	Out-Migration Rates (Per 100 Person-years Lived)							Period (B.E.)
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
1937-1946								2480-2489
Male	.90	4.89	1.90	2.28	.62	.22	.80	
Female	.54	2.13	2.00	1.40	.44	.43	.74	
1947-1956								2490-2499
Male	1.78	5.34	3.17	4.04	1.11	2.02	1.15	
Female	2.06	2.94	2.32	1.44	1.06	.47	.77	
1957-1966								2500-2509
Male	3.56	7.44	5.00	3.31	3.78	1.90	1.82	
Female	4.25	4.38	3.19	2.50	3.22	2.34	1.94	
1967-1976								2510-2519
Male	8.72	13.48	7.49	5.94	5.27	5.14	2.57	
Female	8.12	7.04	4.92	2.63	2.37	3.67	1.90	

effects that transition from the single to married state may be exercising on community migration patterns.

Villagers expressed a preference for matrilocality after marriage. Though highly flexible, the ideal held was that a husband should move to the family residence of his new bride. For at least a few years the newly married couple may then live together with the wife's parents and help work the family lands. After a time, and especially if a younger sister of the wife is herself approaching marital age, the couple moves to a house of their own. Sometimes this house will be built within the family compound or in some other nearby place. Depending on how faithfully villagers follow this ideal, post-nuptial resident patterns will effect migration sex differentials among young adults.

Analysis for study community matrilocality was conducted within the life history data set. In Table VII.17 comparisons by place of birth for husbands and wives currently residing in the community are presented. Of the 251 couples matched, greater numbers (86) and percentages (34.3 percent) of husbands have in-migrated to live at the birth place of their wives than have wives (49 and 19.5 percent) in-migrated to live at the birth place of their husbands. Thus even within the rough measure provided by place of birth comparisons, the matrilocal preferences of villagers appear firmly established.

Table VII.17 Currently Resident Married Couples by Places of Birth

	<u>N</u>	<u>%</u>
Both husband and wife born in community	93	37.1
Both husband and wife born outside community	23	9.2
Husband born in and wife born outside community	49	19.5
Wife born in and husband born outside community	86	34.3
Total	251	100.0

Place of birth comparisons provide only a partial basis for estimating the strength of matrilocality. Moves made before marriage or post-nuptial residences which were less than permanent arrangements have not been considered. To provide a sense of the total mobility flow resulting from post-nuptial residence patterns, moves occurring within a

one-year period after marriage were tabulated by sex and cohort from life history data. From Table VII.18 it is apparent that males were nearly twice as likely to move in the immediate post-nuptial period as females. Furthermore, the differential is largely maintained even for the most recent cohorts.

To provide a broader view of migration sex differentials in the study community, sex ratios for migrants have been calculated from genealogical data for the last 60 years. From Table VII.19 it is clear that male mobility dominance has declined somewhat since World War II. Either males no longer move with as much independence as formerly, or females are more likely to move with greater independence than they had in the past.

In part, higher migration rates of males relative to females in the past resulted from sex selective opportunities for movement provided by military service or entry into the monkhood. Additionally, just as daughters, though especially the youngest ones, were governed by expectations that they remain at home to care for their aging parents, so were sons expected to go off to start and care for their own families. These traditional opportunities and expectations have not disappeared. Matrilocality remains a prevalent pattern in the community; military and religious service still provide a means for men to move around the countryside. Therefore, increasingly higher rates of female migration have not so much resulted from decline in factors which traditionally affected male migration patterns, as from new conditions which encouraged the development of additional patterns of migration. To provide some further insight into the changes that have occurred, migration data are presented in Table VII.20 in terms of the distances moved.

While the ratio of long to short distance moves into the community largely have remained constant throughout this 40 year period, the number of long relative to short distance moves out of the community has tremendously increased. Movement into the community consists primarily of new spouses, or offspring born during periods of temporary residence elsewhere, a pattern essentially unchanged over the last 60 years. In contrast, movement out of the community has shifted from a traditional concern with relocation after marriage to a modern interest in taking advantages of the new economic opportunities that have occurred with development. From Table VII.21 the rapid shift to occupations other than rice farming can be seen as highly correlated with the frequency and distance of moves out of the village.

Table VII.18. Moves Made Within One Year of Marriage by Cohort and Sex

Cohort Age at Time of Life History Survey	Males			Females		
	Moved within one year of marriage		Total	Moved within one year of marriage		Total
	N	%	N	N	%	N
18-19	0	-	0	1	50.0	2
20-24	6	66.7	9	9	42.9	21
25-29	13	72.2	18	9	36.0	25
30-34	11	44.0	25	9	36.0	25
35-39	13	46.4	28	10	27.0	37
40-44	24	60.0	40	14	29.8	47
45-49	20	64.5	31	10	23.3	43
50-54	21	72.4	29	10	21.7	46
55-59	18	62.1	29	9	26.5	34
60-64	16	61.5	26	10	43.5	23
65-79	7	31.8	22	16	40.0	30
80-95	2	40.0	7	2	14.3	14
Total	151	57.2	264	109	31.4	347

Table VII.19. Sex Ratios of Migrants from Genealogical Census Data

<u>Period (A.D.)</u>	<u>Person-Years Lived</u>		<u>In-Migration</u>					<u>Out-Migration</u>					<u>Period (B.E.)</u>
	<u>Male</u>	<u>Female</u>	<u>Male</u>		<u>Female</u>		<u>Ratio M/F**</u>	<u>Male</u>		<u>Female</u>		<u>Ratio M/F**</u>	
			<u>N</u>	<u>Crude Rate*</u>	<u>N</u>	<u>Crude Rate</u>		<u>N</u>	<u>Crude Rate</u>	<u>N</u>	<u>Crude Rate</u>		
1937-1946	7644	8231	71	.93	42	.51	1.82	100	1.31	71	.86	1.51	2480-2489
1947-1956	8810	9346	96	1.09	56	.60	1.82	163	1.85	124	1.33	1.39	2490-2499
1957-1966	9857	10535	91	.92	71	.67	1.37	285	2.89	256	2.43	1.19	2500-2509
1967-1976	9097	10167	79	.87	77	.76	1.15	438	4.81	361	3.55	1.36	2510-2519

* Per 100 person-years lived.

** To standardize for population size differentials between males and females, the ratios are computed from the sex-specific crude rates.

Table VII.20. In- and Out-Migration by Distance of Move

<u>Period (A.D.)</u>	<u>In-Migration</u>							<u>Out-Migration</u>							<u>Period (B.E.)</u>
	<u>Short Distance*</u>		<u>Long Distance**</u>		<u>Unknown</u>		<u>Ratio (Long/ Short)</u>	<u>Short Distance</u>		<u>Long Distance</u>		<u>Unknown</u>		<u>Ratio (Long/ Short)</u>	
	<u>N</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>N</u>	<u>%</u>		<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>		
1937-1946	97	85.8	9	8.0	7	6.2	.07	84	49.1	67	39.2	20	11.7	.80	2480-2489
1947-1956	140	92.1	9	5.9	3	2.0	.06	137	47.7	140	48.8	10	3.5	1.02	2490-2499
1957-1966	144	88.9	16	9.9	2	1.2	.11	208	38.4	326	60.3	7	1.3	1.57	2500-2509
1967-1976	116	74.4	40	25.6	-	-	.34	238	29.8	556	69.6	5	0.6	2.34	2510-2519

* Short Distance = within 30 km. distance of study community.
 ** Long Distance = more than 30 km. from study community

Table VII.21. Primary Occupations of Out-Migrants* by Distance of Move

Period (A.D.)	Short Distance Moves**					Long Distance Moves**					Period (B.E.)
	Rice Farming	Other Agriculture	Non-Farm Work	Unknown	Total	Rice Farming	Other Agriculture	Non-Farm Work	Unknown	Total	
1937-1946											2480-2489
%	78.3	6.0	15.7	-	100.0	42.4	28.8	28.8	-	100.0	
N	65	5	13	-	83	28	19	19	-	66	
1947-1956											2490-2499
%	80.1	1.5	15.4	2.9	100.0	17.6	16.9	54.4	11.0	100.0	
N	109	2	21	4	136	24	23	74	15	136	
1957-1966											2500-2509
%	78.0	5.0	15.5	1.5	100.0	38.1	20.3	38.1	3.3	100.0	
N	156	10	31	3	200	116	62	116	10	304	
1967-1976											2510-2519
%	67.7	4.1	28.1	-	100.0	23.5	29.5	46.4	0.6	100.0	
N	130	8	54	-	192	113	142	223	3	481	

* Students and others with no primary occupation were not included in this table.

** Short Distance Moves = within 30 km. distance of study community.
 Long Distance Moves = more than 30 km. from study community.

A major increase in longer distanced moves and non-agricultural employment occurred in the first decade after World War II. While out-migrants have continued to find non-agricultural employment, within the last decade especially there has been a significant shift to non-rice agriculture. For the shorter distance movers occupational changes are much less evident. In only the most recent decade has there been a slight increase in the numbers employed in non-farm work.

Two principal migration streams have resulted from this upsurge in out-migration. Data presented in Table VII.22 summarizes the strength of migration to these areas and the types of work that villagers have been able to secure there. The overwhelming number of long distance migrants have moved to Bangkok, primarily for construction but also for factory work. An important secondary destination has been the province of Ganchanaburi, about fifty kilometers to the west of the field site. Tremendous expansion in upland cultivation areas, principally for sugar and rattan farming, have opened economic opportunities in both agriculture and factory work.

Why one destination site is favoured over another, and more importantly why some villagers move and others do not, are questions profitably addressed within the characteristics of particular migrant patterns. The amount of land a villager or his family owns is a most salient variable for differentiating stayers from out-migrants. In Table VII.23 genealogical census data for the last three decades shows an inverse relationship between the amount of family land and propensity for out-migration. In addition, as shown in Table VII.24, while landless villagers have been more likely to move to the wage labour opportunities provided in Bangkok and other places, upland farming has attracted proportionally more landed than landless villagers. The reasons are clear: trading village-level poverty for wage labour involves little risk and no investment; moving into upland crop cultivation involves both substantial risk and investment. The motivations for movement are, however, not purely economic. The prior movement of relatives may provide entree into a new way of life that would otherwise not be considered.

An effort to unravel more salient factors associated with village mobility requires more detailed data than that provided through genealogical censusing. In the following chapter, mobility patterns of villagers will be examined within the finer detail of villager life history experiences.

Table VII.22. Selected Long Distance Migrant Destinations by Primary Occupations of Migrants (1937-1976)

Destination	Upcountry Farmer	Rice Farmer	Construction Worker	Other Wage Laborer	Merchant	Factory Worker	Student	Other	N	% of all long distance migrants
Bangkok	-	-	29.8	10.9	12.2	9.1	5.0	32.9	516	40.8
Ganchanaburi Province	29.8	5.8	-	41.4	2.1	3.7	9.4	7.9	191	15.1
Other Central Plains (more than 40 kilometers from field site)	29.5	33.8	2.4	10.6	6.0	1.0	3.4	13.4	417	33.0
Other Regions in Thailand	61.5	6.3	-	4.2	4.2	2.1	5.2	16.7	96	7.6
Unknown or Unspecified	-	24.4	-	17.8	11.1	-	-	46.7	45	3.6

Table VII.23. Out-Migrants and Non-Movers by Land Ownership from Genealogical Census Data for the Period 1947-1976 (B.E. 2490-2519)*

	Non-Movers	Out-Migrants	Total	
			N	% of Total
Landless	56.5	43.5	908	48.1
1-30 Rai	67.1	32.9	747	39.6
Over 30 Rai	82.8	17.2	232	12.3
Total	63.9	36.1	1887	100.0

* Excludes all out-migrant and resident children under the age of 15 and all seasonal migrants.

Table VII.24. Occupation at Distant Destination Site by Land Ownership Status in Study Community for the period 1947-1976

	Landless	Landed	N
Wage Labourer	44.1	55.9	415
Up-country farmer	28.9	71.1	242

Through the alternatives provided by return and seasonal migration, villagers can test out opportunities in other areas before making a commitment to permanent migration. People move within a relative perspective of what they stand to gain versus what they can afford to lose. The prevalence of these patterns of movement as well as the impact that their experiences in the modern world beyond the village have had on subsequent behaviour will be more fully explored in the next chapter.

VII.4 A Concluding Statement: Using the Genealogical Approach for Research in Developing Nations

The genealogical approach was used in this study as a means to recover what Peter Lazlett has called "the world we have lost". That the resulting data contain many quantitative deficiencies should not obscure the qualitative value of the approach. Tracing individual family histories proved to be a key that unlocked memories of the distant past. From the many stories that villagers recalled about their ancestors and the community in which they lived, a picture emerged of the demographic conditions that once prevailed in Baan Tang Chang. Various origins and features of early settlement patterns, regular occurrences of crop short-falls and periodic epidemics, and conditions that made the previous generations' children more productive at an earlier age than children are presently were all part of this population's past. However, as an attempt to more formally reconstruct demographic history the genealogical approach achieved only limited success.

Though considerable efforts were made to use the genealogical framework, available written records, and informant reports to facilitate recovery of all individuals who had ever lived in the community, substantial omission was still evinced to have occurred. Omission was particularly evident for children who either through early death or out-migration had not lived long enough in the community to be remembered. However, extremely low levels of mortality and out-migration through long periods of village history attest to significant failure in the full recovery of adults as well.

High levels of out-migrant and mortality omission appear concurrently as substantial population under-enumeration. Thus the effort to reconstruct demographic history by calculating rates over times becomes problematic. The further back in time the effort proceeds, the more

difficult it is to differentiate the effects of data weakness from actual demographic occurrence. As an attempt to provide sufficiently reliable evidence of demographic patterns in pre-modern periods, the genealogical approach has failed.

For more recent periods, particularly during post-World War II development, the genealogical data has provided some interesting indications of patterns of demographic change. In mortality, adult females were shown to have made more dramatic improvements than males. Cause of death data indicate that rapid decline of maternal mortality bears some direct responsibility for the occurrence. In addition though infant mortality has declined sharply, at present more than one in ten infants does not survive the first year of life.

In migration, selectivity for males and young adults was shown to have been a persistent feature of village history. During the period of recent economic development out-migration was shown to have increased dramatically. Evidence was also presented to show the impact that village economic status had on participation in different mobility patterns. In general, landless villagers were more likely to out-migrate than landed villagers. However, movement to up-country farming opportunities was more selective of landed than landless villagers.

Because it is difficult to collect longitudinal data on mortality and migration patterns in developing regions, the genealogical approach, though limited, provided data of some value. However, with regard to fertility, collection of retrospective fertility histories from surviving women also provides data of some depth. Comparison with genealogical fertility data showed that life history data were more complete. Substantial weaknesses were shown for genealogical fertility both at earlier periods, primarily through omission of infant and early childhood deaths, and even in the most recent period, primarily through omission of out-migrating children. As a result, examination of recent fertility patterns in the study community relied heavily on life history fertility data.

In sum, the overall reliability of genealogical census data was not equal to the task of comprehensive reconstruction of the study community's demographic past. The fault may lie with the procedures I employed or with features particular to Thai society. However, based upon

this test of the method it is concluded that the genealogical approach cannot provide data sets equivalent to the parish registers which have been employed for the study of European historical demography. It may be that a different analytical approach is required. Computation of age of mother at first birth, for example, provided revealing insights into the village demographic past. Similarly, Preston's (1976) suggestion that family size of origin may be related to family size of procreation could be thoroughly tested within a genealogical data set. Also, the influence of birth order on propensity to migrate could be examined. Achieving fruitful results with genealogical data may require more innovative efforts than have been made here.

Nevertheless, even without extending analysis into other areas, the efforts of these last three chapters are not without substantive as well as methodological interest. As Demos (1970) has succinctly summarized the case, "Scholars should never, in my opinion, dismiss an important problem because of 'insufficient data' ... We must be ready to ponder what is likely to have happened - when more certain knowledge is lacking".

In the following two chapters other data collected during field study are presented and analyzed. The objective remains that of exploring the usefulness of alternative methods in demographic research. However, in these instances where no standards may be used to suitably test data reliability the proof must necessarily be placed more heavily on the validity and usefulness of the findings that emerge.

CHAPTER VIII

DEMOGRAPHIC BEHAVIOUR IN BAAN TANG CHANG: MEDICAL TREATMENT,
FAMILY PLANNING, AND CIRCULAR MOBILITY IN THE STUDY COMMUNITY

In the previous three chapters demographic changes in the study community were often related to developments occurring at a broader level. Initial frontier settlement was traced to population pressure and socio-economic control extant within more established regions of the country. Post-World War II mortality decline, as well as corresponding increases in fertility, were attributed to general health condition improvements that came about with public health, transportation, and irrigation system developments. Increasingly higher levels of emigration from the study area were related to post-War economic and transportation developments. Recent fertility decline may similarly be attributed to general modernization that has as one result made modern contraceptive techniques available throughout the country.

From this perspective the demographic history of Baan Tang Chang appears more as something that happened to villagers than as something to which they actively contributed through their own actions. To provide a more comprehensive view, this chapter approaches village demographic history from the perspective of what individual villagers did to effect demographic events in their own lives. Thus analysis is concerned with demographic behaviour, that is, with those actions taken by villagers within some range of alternatives to exercise control over the occurrence or non-occurrence of demographic events. While broad level developments have clearly changed the range of alternatives, it is villager decision-making within this range that has been the motive force behind community demographic change.

In formulating demographic response theory, Davis (1963) directed the attention of demographers to the importance of individual decisions in the dynamic of population change. Using historical examples from Northwestern Europe, Ireland, and Japan, Davis demonstrated how choice exercised among alternative actions produced a collective response to pressures of a growing population. The objective of this chapter is more limited. First, some of the alternatives available to Thai villagers during the period of recent development are delineated; then the decisions which villagers have subsequently made are examined.

In this chapter three areas of behaviour relevant to mortality, fertility, and migration are examined: 1) the medical treatment preferences of villagers in cases of serious illness or accident; 2) use of modern contraceptive methods by community residents, and 3) circular migration patterns in the study community. The data used in this chapter are from several sources: life history survey data provides a quantitative base for investigating behaviour in the three areas of study; case studies, informant interviews, and participant-observation data provide a qualitative base for investigating motivations which underlie particular patterns of behaviour.

VII.1 Morbidity and Medical Treatment in the Study Community

The primary purpose of this section is to examine how villagers make health care decisions by choosing among various medical treatment alternatives available to them. Comprehensive morbidity and medical treatment histories for all adult villagers were collected by use of the life history survey matrix. During the life history interview respondents were asked if they had ever had a serious, life-threatening illness or injury. Positive responses were probed to identify as closely as possible the particular nature of the ailment. As with all other events reported during life history interviews, age and time of occurrence could be readily recovered by use of the matrix format. Once a critical illness or accident had been reported respondents were asked about the particular type of medical treatment that they subsequently used.¹ When further information was desired, retrospective case histories of particular medical treatment decisions were conducted. In addition, prospective case studies of medical treatment decisions were conducted as observation and follow-up study opportunities emerged during the course of fieldwork.

Information about ailments and treatment was always elicited in an open-ended manner - villagers were allowed and encouraged to express the facts and their feelings about morbidity and medical care in their own way

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1. Though case studies revealed that medical treatments sometimes followed a step-ladder path through several different types until a successful cure was effected, it was not possible to record such detail on the life history survey. In consequence, only that which the respondent offered as the primary treatment was recorded.

and idiom without recourse to predetermined checklists or precoded questionnaires. The codes used to record information on the life history matrix were developed from preliminary fieldwork efforts to encompass the entire range of villager morbidity and medical treatment experiences.

Analysis of medical treatment decisions begins with some general comments about community health conditions and villager preceptions of changes which have recently occurred. Attention is given both to how villagers perceived their own situation and to the patterns of morbidity revealed by life history survey data. The primary concern with medical treatment decisions is then pursued through both quantitative and qualitative approaches. In this way an effort is made to illuminate both the patterns of decision-making that have typified the village, and the motivations which underlie these decisions.

VIII.1.1 Modernization, Morbidity, and Medical Treatment in the Study Community

The steady increases in villager expectations of life documented in the previous chapter are one indication of the extent to which health conditions have improved in the study community in recent decades. Other equally valid indications are provided by paying close attention to what villagers say themselves about the changed circumstances in which their lives are lived. Field study provided the opportunity for gathering both indirect and direct evidence of villager perceptions of these changed conditions.²

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2. The evidence from field study was not always in the direction of community health improvement. Villagers frequently stated that people in the past lived much longer than people do presently. Genealogical data do not support this contention. Higher incidences of early life mortality in the past are likely to have created the impression of great longevity among the few who survived. Clearly their robustness in being able to survive the high mortality levels of youth and middle age would have contributed to this impression of great longevity. In this instance quantitative data provides a useful check upon villager perceptions of what the past was like. On another score, however, the evidence is not so clear-cut. Villagers are perplexed by what they perceive to be a growing incidence of cancer (maleeng) among community members. Though diagnostic improvement and general elimination of other diseases bear some responsibility for this perception, it is clear that certain environmental changes fostered by modernization may have themselves increased the incidence of cancer. For example, the heavy reliance upon pesticides and herbicides in village farming may have effected a real increase in the incidence of the disease.

Villagers believe that it is necessary to be especially wary of the ghosts (phii) of those who have met unexpected and untimely deaths. So fierce may these malevolent spirits be that special rituals are required to protect those still living. If an infant dies, it must be buried in a pot according to the manner prescribed by a village spirit doctor (moo phi). If older children or adults in the prime of life die, it is the present custom to dispense with the usual funeral rituals and rites in order to cremate the corpse as quickly as possible.³ These procedures are seen as means to protect survivors, especially family members, from being harassed, haunted, or even possessed by the spirits of the dead.

Villagers recall that in the olden days the spirits of the dead were much more prevalent and ferocious than they are in present times. Taken as allegory or fact, this perceived decline in the number and ferocity of ghosts may be attributed to the declining incidence of sudden and precipitous death that has occurred in the community. Though villagers themselves did not make the connection between fewer ghosts and lower mortality rates, they were well aware that both of these things had occurred.

As stated previously in Chapter V, villagers when comparing past and present would often on their own refer to improvements in village health conditions - epidemics that regularly swept through the community had disappeared, fewer infants and mothers died at childbirth, regular crop shortfalls had come to an end. Pressed for reasons for these improvements villagers usually responded with one of the several attributes of modernization - better doctors and medicines, faster and cheaper transportation, irrigation system improvements.

Vignettes collected during fieldwork sometimes revealed in graphic fashion the impact of other modernization factors. A village woman recalled as a child witnessing the agonized death of a neighbour who had been bitten by a mad dog. When as an adult she herself was bitten by a rabid dog,⁴ she knew enough to go for a series of injections to ward off the disease. The

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3. Apparently this was not always the prescribed manner for dealing with the corpses of those who died unexpectedly or suddenly. Village informants reported that in the past those meeting untimely deaths were quickly buried rather than cremated. The change may have come about with the relative ease of cremating in the wat crematorium compared to the funeral pyre that had to be gathered to dispose of bodies in the past.
 4. Rabies continues to be a serious health problem in the community. During the field study year, I or my research assistants were confronted by four mad dogs.

reason that she knew about this course of treatment, she said, was because she had heard about it on the radio.

School system development has similarly contributed to the improved health of villagers. Once when the cholera epidemics of the past were being recalled, I enquired as to what had caused the disease. To an uneducated elder of the house the cause was unknown. To his forty-year-old son, who had four years of village schooling, the disease was somehow transmitted from one person to another. To the grandson of the house, in his teens and attending secondary school, cholera was known from school to be a water-borne disease which could be prevented by boiling drinking water.

However, just as there were many such illustrations that chances for survival in the village had been improved by various modernization inputs, so were there indications that more subtle alterations in the environment were also having an effect. Occurrences of malaria, for example, declined prior to government eradication efforts in the 1950s. One informant stated that he thought the increasing use of mosquito nets was a likely cause of this decline. Similarly, while bouts with dysentery remain a serious health problem in the community, drinking water improvements have occurred as a by-product of a gradual shift to better roofing materials. In former times, almost all village houses were covered with thatch. While this provided sufficient shelter from rain and sun, it did not provide a sufficiently clean and smooth surface for catching rainwater runoff. In recent years, increasing numbers of houses in the community have been roofed with corrugated metal sheets purchased at the local market. Because metal roofs last longer and cost more, they have become something of a status symbol. An added attraction is that clean and clear rainwater can be collected and stored for drinking. Some village households make it a point to collect sufficient water during the monsoons to provide for their drinking needs for the rest of the year.

Though villagers tended to emphasize the role that modern medical practitioners, facilities, and drugs have had in improving health conditions, from the illustrations presented above it is clear that advances in medical treatment have not been the only factor effecting change. The longstanding debate over whether medical treatment and public health developments (e.g., Griffith, 1926; Razzell, 1975) or dietary improvements (McKeown and Brown, 1955; McKeown *et al.*, 1972) have had the greatest impact in producing mortality decline cannot be addressed here. In the remainder of this section the range of medical treatment alternatives available to villagers, the kinds

of choices they have made, and examination for motivations underlying these choice patterns are considered.

VIII.1.2 Medical Treatment Alternatives in Baan Tang Chang

Before discussing medical treatment alternatives, morbidity patterns in the village community are briefly examined. Of the 819 adult villagers interviewed in the life history survey, 46 percent stated that they had had at least one life-threatening illness or injury. Comparing these respondents with those reporting that they had never been seriously ill or injured showed significant differentials by educational achievement. However, when control is exercised for age of respondent the differential disappears (see Table VIII.1). Thus, because older villagers have had both more illness and lesser education than younger villagers, the observed population differential for illness or accident by educational achievement is the product of age differences. No differentials were evinced for morbidity by land ownership,⁵ a measure of village economic status. While morbidity differentials by sex were also not significant - 43.1 percent of males versus 48.1 percent of females reported at least one life-threatening occurrence - some sex differentials are noted by the incidence of particular afflictions.

Males, most likely because higher mobility levels resulted in increased exposure, show higher incidences of malaria, while substantial numbers of women reported serious illnesses that were referred to as "seasonal fever" (khaay tap røduu).⁶ Data on morbidity by sex for selected causes are presented in Table VIII.2.

Riley and Sermsi (1974: 28-30) provide a taxonomy of the kinds of medical services available in rural Thailand: self-treatment (rak₂sa₂ tua₂ eng), drugseller (khon₂ khaay₂ yaa), traditional doctor (moo₂ booraan), injection doctor (moo₂ chii₂t yaa), government health station doctor (moo₂ suksaalaa),

5. In order to provide land ownership measures that reflected economic position at the time of illness, the data were tested in different ways. Illnesses occurring during childhood and early adulthood were tested against the amount of land reported to be owned by the respondent's parents during that period. Illnesses occurring later in life were tested against the respondent's report of his own land ownership. Neither these splits by age of illness nor testing of the data overall revealed any significant morbidity differentials.
6. Further investigation of this illness is needed, but it appeared to be an illness associated with the menstrual cycle.

Table VIII.1. Proportions Reporting Having Ever Suffered A Serious Illness or Accident by Age and Educational Achievement

Age at Time of Survey	Completed Less Than Four Years of School	Completed Four or More Years of School
18-29	33.3 (15)*	32.7 (205)
30-49	46.5 (71)	41.5 (236)
50+	61.6 (198)	57.0 (86)
Total	56.3 (284)	41.3 (527)

* (N) = Denominator

Table VIII.2
Percentage Distribution Life History Morbidity by Sex for Selected Causes

Sex	Malaria	Seasonal Fever*	Cholera	Accident	Difficulty at Childbirth	Cancer	Total All Causes
Male	56.9% (29)**		26.6% (4)	13.3% (2)		14.2% (1)	37.4% (164)
Female	43.1% (22)	100.0% (38)	73.3% (11)	84.6% (11)	100.0% (10)	85.7% (6)	62.6% (274)
Total	100.0% (51)	100.0% (38)	100.0% (15)	100.0% (13)	100.0% (10)	100.0% (7)	100.0% (438)***

* See footnote 6.

** (N)

*** Includes all illnesses or injuries reported, including an additional 15 males and 43 females reporting more than one occurrence.

private clinic doctor (moo khliinik), provincial hospital doctor (moo roong phayaabaan changwat), Bangkok hospital doctor (moo roong phayaabaan krung theep), and private hospital doctor (moo roong phayabaan eegkachon).⁷ Tang Chang villagers categorized the medical services to which they had access in a similar way. With slightly more detail than the above categorization and presented by period of occurrence, the distribution of medical services which adult villagers sought for treatment of serious illnesses or accidents is shown in Table VIII.3.

Table VIII.3 shows that within the last 25 years there has been a significant shift by villagers from traditional to modern medical practitioners. Nevertheless, even within the most recent five years more than one out of every five villagers suffering a serious affliction preferred treatment by a traditional doctor than a modern medical practitioner. As shown in Table VIII.4, village medical preferences are largely unaffected by age differentials. Thus neither conservatism among the elderly nor innovation among the young is a marked feature of villager medical treatment preferences.

The first substantial shift to modern medical treatment occurred through services provided by local "injection doctors" (moo chiiit yaa). During the 1950s, over one-quarter of serious health problems faced by villagers were treated by injection doctors. Because they were usually themselves villagers and because they customarily treated patients in their own homes, injection doctors were easily able to bridge the gaps of social and spatial distance between villagers and more highly qualified and established medical professionals. In Polgar's words, injection doctors are "marginal practitioners" who "transmit aspects of a great tradition (modern medicine) by bringing them closer to the majority of the population both by simplifying them conceptually and - due to their intermediate social positions - by bridging the status gap" (1963: 410-411, cited in Cunningham, 1970b). As Cunningham (1970b) points out, their success in Thailand is based upon the reputations they are able to gain, the social conviviality of home-visit treatments, and the efficacy of antibiotics.

7. The word moo (doctor) is used in reference to a variety of different medical practitioners and does not itself differentiate between types of practitioners. Traditional practitioners, nurses, paramedics, as well as doctors trained in modern medical schools, are all referred to as moo.

Table VIII.3

Percentage Distribution of Medical Treatment Preferences for Incidences of Serious Illness or Accident by Period

Period (A.D.)	Tradit- ional Doctor	Monk	Self- Treat- ment	In- jection Doctor	Phar- macy	Health Centre Paramedic	Health Centre Doctor	Pro- vincial Hospital	Bangkok Hospital	Other Hospital	Private Clinic	Total	Period (B.E.)
1902- 1931	80.0 (20) *	8.0 (2)	12.0 (3)	- (0)	- (0)	- (0)	- (0)	- (0)	- (0)	- (0)	- (0)	100.0 (25)	2445- 2474
1932- 1941	86.1 (31)	2.8 (1)	2.8 (1)	5.5 (2)	- (0)	- (0)	- (0)	2.8 (1)	- (0)	- (0)	- (0)	100.0 (36)	2475- 2484
1942- 1946	83.3 (35)	2.4 (1)	4.8 (2)	4.8 (2)	- (0)	- (0)	- (0)	2.4 (1)	2.4 (1)	- (0)	- (0)	100.0 (42)	2485- 2489
1947- 1951	82.4 (28)	2.9 (1)	2.9 (1)	- (0)	2.9 (1)	5.9 (2)	- (0)	- (0)	2.9 (1)	- (0)	- (0)	100.0 (34)	2490- 2494
1952- 1956	57.5 (23)	2.5 (1)	5.0 (2)	30.0 (12)	- (0)	2.5 (1)	2.5 (1)	- (0)	- (0)	- (0)	- (0)	100.0 (40)	2495- 2499
1957- 1961	46.0 (23)	2.0 (1)	4.0 (2)	22.0 (11)	2.0 (1)	- (0)	4.0 (2)	6.0 (3)	8.0 (4)	- (0)	6.0 (3)	100.0 (50)	2500- 2504
1962- 1966	33.3 (16)	- (0)	8.3 (4)	14.6 (7)	6.3 (3)	6.3 (3)	2.1 (1)	6.3 (3)	12.5 (6)	4.2 (2)	6.3 (3)	100.0 (48)	2505- 2509
1967- 1971	18.6 (13)	- (0)	8.6 (6)	15.7 (11)	7.1 (5)	7.1 (5)	5.7 (4)	10.0 (7)	15.7 (11)	2.9 (2)	8.6 (6)	100.0 (70)	2510- 2514
1972- 1976	18.3 (17)	2.2 (2)	9.7 (9)	10.8 (10)	3.2 (3)	9.7 (9)	2.2 (2)	12.9 (12)	18.3 (17)	1.1 (1)	11.8 (11)	100.0 (93)	2515- 2519
Total	47.0 (206)	2.1 (9)	6.8 (30)	12.6 (55)	3.0 (13)	4.6 (20)	2.3 (10)	6.2 (27)	9.1 (40)	1.1 (5)	5.3 (23)	100.0 (438)	Total

* (N)

Table VIII.4 Percentage Distribution of Medical Treatment Preferences
Within Last Twenty-Five Years by Age of Respondent

Current Age	Traditional	Modern	Total
18-29	33.3 (24)*	66.6 (48)	100.0 (72)
30-44	25.5 (25)	74.5 (73)	100.0 (98)
50+	36.5 (38)	63.5 (66)	100.0 (104)
Total	31.8 (87)	68.2 (187)	100.0 (274)

*(N)

A brief profile of Moḡ Chalerm, the most popular injection doctor in the study community, provides an illustrative example of the advantageous position and services offered by this type of practitioner in meeting the medical needs of a rural village population. Moḡ Chalerm first came to the community about twenty years ago when he married a local village woman. Though a rice farmer, he gradually developed his medical skills by ministering to the needs of his own family. Because of his success, first nearby neighbours and then villagers from the community at large began to ask for his services, for which he charged a fee. Though he continues to farm rice, he presently derives most of his income from his medical practice. He has a motorized boat in which he makes housecalls at any time of the night or day. He carries with him a black satchel containing syringes, antibiotics, and other medicines. He claims to make at least two housecalls within the community a day, and rarely does he disappoint his patients by failing to administer an injection.

Not all villagers were convinced that he was a skillful practitioner of the medical arts. Nevertheless, his services were in high demand, often as an initial effort to relieve an ailment, because his services were so conveniently available. Though his fees were somewhat higher than what villagers would normally pay at local government health centres, his services were in greater demand, even in cases of serious illness as the data in Table VIII.3 show.

Moo Chalerm's practice may be contrasted with that of Moo Ett, the local government medical officer. A trained paramedic, villagers nevertheless had a very low opinion of his skills. As one villager stated, Moo Ett could not even find the vein in a person's arm, let alone give a proper injection. As an outsider sent by the government to man the local health station, he was treated publicly with indifference and privately with derision. Save for the occasional government health survey, he never made housecalls, and the government health centre he operated was noticeably empty throughout each day.

Fortunately, villagers have also had access to several other medical treatment alternatives. With transportation improvements and medical developments in the public and private sectors, villagers have made increasing use of these other forms of modern medical care. In particular, villager preference for government hospital treatment in cases of serious illness or injury has increased steadily over the last 20 years. Within the last five year period nearly one out of every three villagers preferred, in cases of serious illness or accident, government hospital treatment to any other alternative. It is most interesting, however, that more villagers have opted for treatment in the distant hospitals of Bangkok than in any of the three provincial hospitals located within a 30 kilometre radius of Baan Tang Chang.

A parallel development has occurred with increasing use of private clinic facilities. The most-well known clinic used by Tang Chang residents was owned and operated by a government hospital doctor during his off-work hours. His clinic was housed in a building of several stories, contained facilities for about 20 bed patients, and was well-staffed with several assistants. While the fees for private treatment were considerably higher than what would be paid in the government hospital where this doctor also worked, village patients felt that they received much better and more personalized care in his private clinic than they would in the government hospital. In addition, by consulting him in his private practice they were personally choosing who they would be treated by, a choice, villagers claim, they would not be able to exercise in the government hospital.

In Table VII.8 village medical treatment data are regrouped for the last 25 years to facilitate comparisons between private and government medical treatment alternatives. In addition, this rearrangement of medical treatment alternatives roughly approximates a scale of medical cost differ-

entials. In general, the more traditional⁸ and local⁹ the practitioner, the cheaper the price for his services. Similarly, medical personnel functioning as government health officials will likely be less expensive than when functioning in a private capacity.¹⁰ Treatment in government Bangkok hospitals, because of the added costs of transportation, are higher than those in provincial hospitals, but in most cases probably still less than services provided at private clinics.

In agreement with Cunningham (1970b: 6), Riley and Sermsi remark that "to a rather striking extent, the Thai population chooses not to utilize available government medical services" (1974: 1). From the data of Table VIII.5, Tang Chang villagers exhibit a similar pattern of under-utilization of available government medical facilities. Over the last decade, less than 25 percent of villagers facing life-threatening ailments reported being treated by nearby government health centre and hospital practitioners. Of those choosing local modern medical practitioners, nearly twice as many

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8. While some well-known traditional doctors charge extremely high fees for their services, the traditional doctors whom villagers consulted were usually villagers themselves who charged nominal fees for their services.
 9. Two villagers, however, even after close and repeated questioning, insisted that modern medicine was less expensive the further villagers went from Tang Chang. Most expensive, they claimed, was the local health clinic paramedic because, being far from his government supervisors, he could overcharge villagers. More moderately priced was the district health station (satani animae amphoe). Cheaper still, the provincial hospital. And cheapest of all, Bangkok hospitals. This neat inverse correlation between distance and price was not confirmed by other villagers' experiences. To some extent the appraisal of these two villagers was based on their dislike and dissatisfaction with local government health officials. Nevertheless, their statements contain a grain of truth. The further villagers go away from the village, the more likely and less reluctant are they to consider themselves poor and ask for government assistance or free medical care. Most villagers, however, are not even aware that they have this option. In addition, transportation and housing costs may significantly increase the cost of medical care in distant locations.
 10. The large majority of doctors, midwives and paramedics employed in government health service in Thailand operate private clinics in their spare-time hours. They gain much more income from their private practice than from their public position.

Table VIII.5
Percentage Distribution of Medical Treatment Alternatives by General Types *

Period (A.D.)	Traditional** Service	Local Government Health Centre	Local Private** Service	Provincial Hospital	Bangkok Hospital	Private Clinic	Total	Period (B.E.)
1952- 1956	62.5 (25)***	5.0 (2)	32.5 (13)	- (0)	- (0)	- (0)	100.0 (40)	2495- 2499
1957- 1961	50.0 (25)	4.0 (2)	26.0 (13)	6.0 (3)	8.0 (4)	6.0 (3)	100.0 (50)	2500- 2504
1962- 1966	39.1 (18)	8.7 (4)	26.1 (12)	6.5 (3)	13.0 (6)	6.5 (3)	100.0 (46)	2505- 2509
1967- 1971	23.5 (16)	13.2 (9)	27.9 (19)	10.3 (7)	16.2 (11)	8.8 (6)	100.0 (68)	2510- 2514
1972- 1976	25.0 (23)	12.0 (11)	19.6 (18)	13.0 (12)	18.5 (17)	12.0 (11)	100.0 (92)	2515- 2519

* As it could not be ascertained whether "other hospital treatment" referred to private or government hospitals, the five reports of "other hospital treatment" have been omitted from this table.

** As "self-treatment" referred to self-administration of both traditional herbs and modern medicines, reports of self-treatment have been evenly distributed between "Traditional Services" and "Local Private Services".

*** (N)

preferred the more expensive private practitioners to their government counterparts. Of those opting for government hospital treatment, more preferred the services available in Bangkok to those closer to home. Almost as many chose private clinics over the considerably less expensive provincial hospitals.

The data in Table VIII.6 show that village medical treatment preferences in life-threatening situations cannot be satisfactorily explained in terms of intra-village economic differentials. For childhood and adolescent afflictions, no differential treatment preferences are shown for cross-tabulation by parents' land ownership. For illnesses and injuries occurring after the age of 20, only slight evidence of a direct relationship between land ownership and the cost of medical treatment is observed.¹¹ It appears then that factors other than relative cost are affecting villagers' medical treatment preferences. As shown in Table VIII.7 attempts to delineate preference patterns by educational achievement are similarly to little avail. While the differentials are in the expected direction of higher education being associated with and related to more modern and expensive forms of medical treatment, they are too small to be significant. While more detailed quantitative analysis could possibly uncover some explanatory relationships of greater significance, a more promising approach is provided by further exploration of qualitative data on village treatment preferences.

In concluding this section, medical treatment preferences are briefly analyzed from the perspectives of patient and practitioner. Villagers view their relationships with medical practitioners largely in terms of a patron-client structure:¹² patients give moo respect and remuneration in return for which they receive personal care and hopefully successful treatment. Each successful cure adds to the reputation of a particular moo and thereby increases his status among villagers.

Traditional doctors well understand the social need as well as the

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11. The relationship is not strong enough to statistically exclude the possibility that the pattern results from random fluctuation.
 12. The dyadic and personal bonds of the patron-client structure were a traditional feature in both village society (see Piker, 1975) and Thai society generally (see Hanks, 1975 and Rabibhadana, 1975). Though seriously undercut in Baan Tang Chang by the growing dominance of the money economy, some vestiges of patron-client relations still remain. These are more fully discussed in the chapter following.

Table VIII.6

Percentage Distribution of Medical Treatment Preferences by Land Ownership for Serious Illnesses or Accidents Occurring Within the Period 1951-1976

(a) Illnesses and Injuries Occurring at 20 Years of Age or Younger

<u>Parents' Land-owning Status</u>	<u>Traditional Service</u>	<u>Local Government Health Centre</u>	<u>Local Private Service</u>	<u>Provincial Hospital</u>	<u>Bangkok Hospital</u>	<u>Private Clinic</u>	<u>Total</u>
Landless	41.4 (12)*	13.8 (4)	27.5 (8)	10.3 (3)	3.4 (1)	3.4 (1)	100.0 (29)
1-10 Rai	43.8 (7)	6.3 (1)	18.8 (3)	- (0)	18.8 (3)	12.5 (2)	100.0 (16)
11-39 Rai	45.8 (11)	16.7 (4)	16.7 (4)	8.3 (2)	8.3 (2)	4.2 (1)	100.0 (24)
40+ Rai	40.0 (2)	- (0)	60.0 (3)	- (0)	- (0)	- (0)	100.0 (5)
Total	43.2 (32)	12.2 (9)	24.3 (18)	6.8 (5)	8.1 (6)	5.4 (4)	100.0 (74)

(b) Illnesses and Injuries Occurring at over 20 Years of Age

<u>Land Ownership Status</u>	<u>Traditional Service</u>	<u>Local Government Health Centre</u>	<u>Local Private Service</u>	<u>Provincial Hospital</u>	<u>Bangkok Hospital</u>	<u>Private Clinic</u>	<u>Total</u>
Landless	44.0 (37)	7.1 (6)	27.4 (23)	3.6 (3)	10.7 (9)	7.1 (6)	100.0 (84)
1-10 Rai	32.1 (17)	7.5 (4)	24.5 (13)	11.3 (6)	17.0 (9)	7.5 (4)	100.0 (53)
11-39 Rai	22.6 (7)	12.9 (4)	22.6 (7)	12.9 (4)	12.9 (4)	16.1 (5)	100.0 (31)
40+ Rai	20.0 (3)	- (0)	13.3 (2)	40.0 (6)	13.3 (2)	13.3 (2)	100.0 (15)
Total	35.0 (64)	7.7 (14)	24.6 (45)	10.4 (19)	13.1 (24)	9.3 (17)	100.0 (183)

*(N)

Table VIII.7

Percentage Distribution of Medical Treatment Preferences by Educational Achievement for Adulthood* Illnesses or Injuries Occurring Within the Period 1951-1976

Years of Schooling Completed	Traditional Service	Local Government Health Centre	Local Private Service	Provincial Hospital	Bangkok Hospital	Private Clinic	Total
Less than 4 years	39.6 (40)**	7.9 (8)	24.8 (25)	8.9 (9)	10.9 (11)	7.9 (8)	100.0 (101)
Completed 4 or more years	27.8 (27)	7.2 (7)	25.8 (25)	11.3 (11)	18.6 (18)	9.3 (9)	100.0 (97)

* Over 20 years of age.

** (N)

psychological benefits derived from fulfilling the role of patron administering to their clients' needs. They thus comport themselves in a manner that demonstrates their superiority to the evils which cause illness while at the same time remaining approachable to villagers.¹³ Among government medical practitioners the opposite is often the case: they purport, by virtue of their higher education and non-village background, a superiority to villagers which thereby obstructs their ability to provide satisfactory treatment. The bureaucratic structure in which government medical facilities operate is likely to place further obstacles in the way of personally-based service. Villagers complain that when they attend government health centres or hospitals they will invariably have to wait a long time before being seen, will often be assigned a doctor whom they do not know, and may be treated rudely or brusquely in the process. In consequence, they prefer those services where they can gain the immediate and personal attention of the practitioner.

Though there is a strict dichotomy between the techniques employed by traditional and modern medical practitioners, the more successful among the latter will be those who most successfully offer their services within the patron-client structure provided by the former. Villagers pragmatically recognize the more efficacious powers of some kinds of modern medicines. However, they attribute successful treatment more to the skill of the individual mo than to the kinds of medicines he uses or the training he has. Thus lower-level paramedics operating private personally-based services can claim a disproportionate share of the treatment of even life-threatening ailments. There are, of course, dangers in this. While the broad-spectrum antibiotics they frequently employ can effectively treat or arrest a number of ailments, they have neither the knowledge nor the will to recognize ailments which lie outside their curative capacity. Thus the treatment of illness, especially at these lower levels, is a kind of random process where various treatments are administered with hope that they will have some remedial effect.

13. Two of the more highly respected traditional doctors who served Tang Chang villagers achieved this effect by maintaining a fearless demeanour with regard to treating their respective specialities, spirit-possession and snake-bite. If they showed any signs of fear, they would not only fail to effect a cure but themselves be afflicted. While their fearlessness set them apart from most villagers, their continued devotion to rice farming put them on a common ground.

While government workers in smaller health centres may be better-trained than self-employed paramedics, the system in which they work is clearly structured to favour the more lucrative benefits of private practice. Government salaries are notoriously low, administration generally lax, and the tradition of dual public-private practice well tolerated. It would be unusual if government health service workers did not devote great amounts of energy to their private practices.¹⁴ One nearby government midwife had a large clientele that followed her as she was shifted from one health centre to another. Her private practice of course shifted as well.¹⁵

Many villagers end up in hospitals after a series of failures in seeking cures through other medical services. For the most part this is not the result of referrals¹⁶ but rather a step-ladder approach to finding successful medical treatment.¹⁷ Hospital treatment thus became a kind of last resort for many villagers. Possibly in part as a result of delays caused by ineffective treatment encountered along the way, villagers indicated their displeasure with nearby government hospitals by referring to them as "slaughter houses" (roong khaa sat).

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14. Villagers were not asked specifically to differentiate between consultation of government health officers which occurred in public or private practice. Thus, some amount of treatments reported to have occurred at local government facilities may actually have been contracted with local government health officers working within their private practices.
 15. In a market town I once saw these two sectors neatly contrasted. While talking with a midwife in an empty, poorly-supplied government health centre, I chanced to remark upon the well-stocked and well-attended clinic that was located just across the street. The midwife proudly pointed out that that was her private clinic, and that those women were waiting to see her during her up-coming lunch hour.
 16. In some instances, though particularly in Bangkok, doctors will diagnose their patients in private practice, and perform an indicated operation in their public practice at a government hospital.
 17. The approach is not invariably from traditional to lower-level paramedics to hospitals. Villagers gave several instances of hospital failures being followed by a traditional doctor's success. The most recent example was of a young man's multi-fractured leg. While Bangkok doctors proclaimed that it would never mend properly, a traditional bone doctor (moo graduuk) was subsequently consulted and apparently effected a ~~complete~~ recovery.

In choosing among medical care alternatives, villagers seek to fix responsibility for being cured upon particular individuals. In going to Bangkok they usually rely upon a knowledgeable relative to intercede in gaining them proper medical attention. By attending private clinics they feel that they have established a dyadic bond with a practitioner who they hold in high regard.¹⁸ This need for personalized care explains both villagers' preference for private practitioners and their disdain for large government hospitals. While recognizing the superiority of modern medicine, villagers prefer services that are most similar in form to the patron-client relationships they once enjoyed with traditional mojo. Depersonalization of medical care in the government health system is countered by both doctors and patients through services offered in the private sphere. Because self-employed paramedics provide, in addition to personalized service, treatments that are both inexpensive and convenient, they are able to also attend a large clientele, even in cases of a serious nature.

VIII.2 Towards Fertility Transformation: Acceptance and Use of Modern Contraceptives in the Study Community

I brought to field study a certain scepticism about the success being claimed for family planning efforts in Thailand: if attitudes were so favourable and acceptance rates so high, why had Thai fertility levels not substantially declined?¹⁹ I was concerned that bias, both in eliciting attitudes towards and in collecting data about family planning practices, had resulted in a distorted view of what the situation really was. In consequence, during those first weeks of field study I studiously avoided mentioning anything that could be remotely connected to the subject of birth control. Yet, it seemed that I hardly had a conversation which did not at some point revolve around family planning practices. As an outsider and a Westerner I was presumed to be knowledgeable about such things. Villagers, though particularly village women, wanted to know if the same birth control

18. Like other relationships, the doctor-patient bond is ephemeral and pragmatic. If a cure does not quickly result, another practitioner will swiftly be sought.

19. More recent data provide evidence that incipient fertility decline is in fact well underway (Pardthaisong, 1978; Knodel and Debavalya, 1978).

methods they knew and used were also available and used by people in my country. Above all, they wanted to know about side-effects. With candor they related their own experiences, misgivings, and thoughts about family planning. I did not prompt these conversations; they came as a flow of information from their own understanding and experiences in search of whatever information I could give them in return. My impression was that what village women wanted most from me was reassurance that the contraceptive techniques they were using or intending to use would neither fail nor harm them.

It was not until a half year later that I systematically recorded the fertility histories of village women. My initial impressions remained intact. There was no reluctance to talk about family planning; there was eagerness to know more about it. From the presentation and analysis of these fertility histories that follows, it is evident that for many village women interest had already become practice.

VIII.2.1 The Impact of Modern Contraceptive Practices on the Study Community

Though government sanctioned and supported family planning programmes did not begin until 1970, it is clear from Table VIII.8 that a number of villagers were able to gain early access to modern contraceptive means through government pilot projects or private distribution channels. The earliest acceptor in the community, for example, was a village teacher who had been vasectomized by a private practitioner in a nearby market town. Most other early acceptors relied upon oral contraceptives purchased from nearby drugstores. However, two village women received sterilizations from a pilot project operating in a large Bangkok hospital during the late 1960s.

In the six years since the government made an official commitment to providing family planning services, a per year average of more than one out of every 20 eligible village women²⁰ (5.4 percent) have accepted family planning. By the year of field study, 1976, more than one out of every three eligible women (35.4 percent) had ever used some method of modern

20. Eligible women are defined as women 15-44 years of age currently married and living with spouse.

Table VIII.8
Modern Contraceptive Users* by Age and Year of First Use as Percent of Eligible Women

Year A.D.	15-19	20-24	25-29	30-34	35-39	40-44	15-44	Total Acceptors**	Total Eligible Women 15-44	Year B.E.
1958	-	-	-	4.0	-	-	1.2	2	173	2501
1959	-	-	-	-	-	-	-	-	177	2502
1960	-	-	-	-	-	-	-	-	176	2503
1961	-	-	-	-	-	-	-	-	171	2504
1962	-	-	-	-	-	-	-	-	172	2505
1963	-	-	-	-	-	-	-	-	171	2506
1964	-	-	-	-	-	-	-	-	170	2507
1965	-	-	-	-	-	-	-	-	170	2508
1966	-	-	3.2	-	2.8	-	1.2	2	169	2509
1967	-	-	3.4	2.6	2.7	-	1.8	3	171	2510
1968	-	-	-	-	2.8	-	0.6	1	168	2511
1969	-	7.1	15.4	2.4	3.0	-	4.3	7	164	2512
1970	-	-	10.0	4.6	2.9	-	3.0	5	164	2513
1971	-	6.3	9.1	5.9	4.9	2.8	5.2	8	155	2514
1972	-	7.1	12.5	3.4	12.8	-	6.7	10	149	2515
1973	-	13.3	8.7	3.6	2.6	5.7	5.6	8	144	2516
1974	-	14.2	4.2	7.1	-	-	3.4	5	145	2517
1975	-	-	-	-	11.9	5.7	4.7	7	148	2518
1976	-	-	12.5	20.8	3.1	2.5	7.1	10	140	2519

* Includes five women who were multiple acceptors.

** Includes the wives of three vasectomy acceptors.

contraception. Compared to the most recently available national figure of 39.2 percent for ever-married women (Thailand, IPS and NSO, Vol. 2, 1977: 334), and given the relatively isolated locale of the study community, this represents a remarkably high level of family planning acceptance.

Particularly noteworthy are the high acceptance levels recorded for women 25 to 29 years old. This may indicate that significant numbers of village women are attempting to control fertility at an early stage of family formation. By looking more closely at contraceptive use patterns and subsequent changes effected in age-specific marital fertility rates, the impact that family planning has had upon village fertility levels may be ascertained.

A commonly held view that the age pattern of fertility in populations beginning transition to lower modern levels is predictable has been given most recent expression by Knodel (1977: 227-230):

Since most couples want at least some children and bear them during the early years of marriage, fertility rates later in marriage (and consequently at older ages) should be the first and the most strongly affected as family limitation becomes more common. Lower rates at younger ages follow, as successive generations of married couples aim for progressively smaller sizes and birth control is used for spacing as well as limiting.

A general statement of what has occurred in many populations should not, however, obscure consideration of differences which may arise in others. Knodel's dismissal, for example, of different fertility decline patterns evinced for Thailand and Malaysia as the result not of actual divergence from this expected pattern but of data unreliability, is a judgement made perhaps too quickly. In fact, patterns of contemporary fertility decline, especially given the rapidity with which modern contraceptive means may be made available, may vary considerably from one cultural group to another. Recent fertility change in the study community provides a case in point.

Study community patterns of continued contraceptive use shown in Table VIII.9 indicate that substantial family planning occurred first among the younger rather than the older women in the community. As early as 1970, the year that the government-sponsored family planning programme was begun, already 30 percent of eligible women 25-29 were using modern contraceptive techniques. Continued family planning use remained highest

Table VIII.9
Years of Contraceptive Practice by Age as a Percent of Person-Years Lived by Eligible Females

Year A.D.	15-44								Total User Years	Total Eligible Women	Year B.E.
	15-19	20-24	25-29	30-34	35-39	40-44	15-44				
1958	-	-	-	4.0	-	-	1.2	2	173	2501	
1959	-	-	-	4.2	-	-	1.1	2	177	2502	
1960	-	-	-	4.7	-	-	1.1	2	176	2503	
1961	-	-	-	2.8	2.6	-	1.2	2	171	2504	
1962	-	-	-	-	4.2	-	1.2	2	172	2505	
1963	-	-	-	-	4.3	-	1.2	2	171	2506	
1964	-	-	-	-	4.7	-	1.2	2	170	2507	
1965	-	-	-	-	5.0	-	1.2	2	170	2508	
1966	-	-	3.2	-	5.6	2.5	2.4	4	169	2509	
1967	-	-	3.4	2.6	5.4	4.3	3.5	6	171	2510	
1968	-	-	3.7	-	2.9	6.4	3.0	5	168	2511	
1969	-	7.1	19.2	2.4	3.0	7.0	6.7	11	164	2512	
1970	-	-	30.0	11.4	2.9	7.3	9.1	15	164	2513	
1971	-	6.3	27.3	17.7	9.8	11.1	13.5	21	155	2514	
1972	-	14.3	29.2	27.6	20.5	10.8	19.5	29	149	2515	
1973	-	20.0	34.8	32.1	15.8	14.3	21.5	31	144	2516	
1974	-	21.4	33.3	35.7	20.5	12.1	22.6	33	145	2517	
1975	-	6.3	25.0	33.3	33.3	14.3	23.0	34	148	2518	
1976	-	5.6	37.5	45.8	28.1	17.5	26.4	37	140	2519	

in this age group until five years later, by which time, of course, women in the cohort had aged into the next age group. Thus, initially at least, contraceptive use patterns in the study community are marked by innovative behaviour occurring more among younger than older women in the population. In-depth qualitative investigation revealed that the intention was not to space children but rather to curtail fertility at relatively low family size levels.

Comparing percentage fertility declines by age for Baan Tang Chang with selected Asian populations examined by Knodel (1977: 236) shows initial fertility decline in the study community to be somewhat different from the expected pattern (Table VIII.10). While women in the older age groups have effected substantial fertility decline, it is village women at the 25-29 age group who have achieved the highest levels of decline. Moreover, given much higher fertility rates at this age group, the impact upon overall village fertility is correspondingly greater.²¹

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21. Following Coale and Trussel (1974), Knodel has used the value m , an index of fertility control, to provide a summary basis for comparing differences between patterns of age-specific marital fertility. The index is derived by the equation

$$m = \ln [r(a)/M \cdot n(a)] v(a)$$

where $r(a)$ = schedule of age-specific marital fertility rates under consideration

$n(a)$ = an empirically derived standard natural fertility schedule

$v(a)$ = an empirically derived function expressing a typical pattern of voluntary fertility control

M = a scale factor equal to the ratio of $r(a)/n(a)$ at ages 20-24.

However, the empirically derived age schedule of fertility control ($v(a)$) incorporates a pattern of greater control at the higher ages. In consequence, computing values of m for the study community did not provide a reliable indication of the changes actually occurring. While the study community m changes from .020 to .400 in the five years 1967-1971 when fertility declined by only 3.1 percent, in the next five years 1972-1976 while fertility declined an additional 31.8 percent, the m value increased to only .429.

An additional problem for the relatively late marrying Thai women is that the 20-24 age-specific marital fertility rates upon which the scale factor M is based suffer inadequacies of the same kind as the marital fertility rates of the 15-19 age group. This measure of the fertility that married women may be expected to have as they pass through these ages does not allow for the fact that considerable proportions have not yet married. More reliable results can be achieved by using the 25-29 age group to calculate the scale factor M , but of course this further restricts the amount of fertility experience that is being summarized by the index.

Table VIII.10
Percentage Declines in Marital Age-Specific Fertility

Population	Starting Period or Year	Initial Fertility Level*	Approximate Number of Years to Decline 25%	Percentage Decline at Ages			
				25-29	30-34	35-39	40-44
Baan Tang Chang	1957-1966	5.715	9	47	24	34	24
Hongkong**	1961	4.305	7	22	24	25	39
Korea**	1962-1963	5.267	8	5	30	45	51
Singapore**	1957	5.283	9	13	27	36	38
Taiwan**	1959	5.000	5	0	23	39	62

* Following Knodel, initial fertility refers to total marital fertility above age 25 (5 x Σ ASMF for age groups above 25). For Baan Tang Chang the calculation was for age groups 25-29 to 40-44. For the other populations in the table the calculation was based upon age groups 25-29 to 45-49.

** From Knodel, 1977: 236.

To estimate the impact that contraceptive use has had on fertility levels in the study community, the numbers of births averted by use of birth control were computed. Though obviously an underestimate,²² births averted have been calculated by applying the appropriate schedules of community age-specific fertility rates to the age-years of birth control practice. To summarize the overall impact upon fertility the estimated numbers of births averted have been used to re-compute General Fertility Rates for the population. The difference between the actual GFR and the expected GFR that would have resulted had birth control not been used provides a percentage summary of the impact that family planning practices have had on study community fertility levels. The calculations and results are shown in Tables VIII.11 and VIII.12. It is concluded that actual fertility during the last five-year period when contraceptive use reached its highest level was only three-fourths of what it would have been had no birth control been used.

VIII.2.2 Contraceptive Use Patterns

Village women have overwhelmingly preferred oral contraceptives to any other method of birth control (Table VIII.13). Readily available at market town pharmacies, private clinics, and government health centres, for many women the pill has proven a safe and effective means for limiting fertility. As with health care decisions generally, the patron-client relationship appeared an important component of where women purchased the pill. Though it was cheaper at government health centres, many village women were willing to pay the higher costs of purchase in the private sector. The personalized attention and convenience that they were thereby afforded conformed better to their traditionally-based needs and expectations of doctor-patient relationships.

Injectibles only became available during the last few months of field study. The favourable attitudes of the four women who had accepted this method, however, augur well for its future popularity. If side-effects and attendant rumours do not become a problem, within a few

22. Underestimation is a result of two factors: 1) the age-specific marital fertility rates include the reproductive experiences of contracepting women; 2) contracepting women are likely to be self-selective from a relatively more fecund group than non-contracepting women.

Table VIII.11

Calculation of Births Averted as a Result of Contraceptive Use

	(1) Eligible Female Person- Years	(2) Births	(3) Age-Specific Fertility Rates (2) ÷ (1)	(4) Person-Years of Birth Control Care	(5) Births Averted (3) x (4)
1957-1966 (2500-2509)*					
15-19	51	15	.294	-	-
20-24	234	97	.415	-	-
25-29	351	145	.413	1	.41
30-34	411	133	.324	7	2.27
35-39	375	104	.277	11	3.05
40-44	295	38	.124	1	.13
Totals	1717	532	1.852	21	5.86
1967-1971 (2510-2514)					
15-19	28	10	.357	-	-
20-24	80	38	.475	2	.95
25-29	124	41	.331	19	6.29
30-34	195	61	.313	13	4.07
35-39	181	55	.304	9	2.74
40-44	214	34	.159	15	2.39
Totals	822	239	1.939	58	16.44
1972-1976 (2515-2519)					
15-19	26	7	.269	-	-
20-24	77	25	.325	10	3.25
25-29	123	26	.220	39	8.58
30-34	130	32	.246	45	11.07
35-39	190	35	.184	45	8.28
40-44	180	17	.094	25	2.35
Totals	726	143	1.338	164	33.53

* B.E.

Table VIII.12Adjustment of General Fertility Rate

<u>Year A.D.</u>	<u>General Fertility Rate</u>	<u>Expected GFR (Births Averted Included)</u>	<u>Percent Difference</u>	<u>Year B.E.</u>
1957-1966	.310	.313	1.0	2500-2509
1967-1971	.291	.311	6.8	2510-2514
1972-1976	.196	.243	24.1	2515-2519

years injectibles could supplant pills as the most preferred method.

Low levels of IUD acceptance result from two factors: the method is not widely available through private distribution channels; embarrassment and discomfort with the prospect of insertion discourage its use. Similarly, female sterilizations were the least used method because of the perceived inconvenience and discomfort involved in having the operation performed. While the few women who had been sterilized expressed satisfaction with the thorough screening and excellent care they had received in a Bangkok hospital, many prospective sterilants complained of the bureaucratic delays and expense that would be incurred by an operation so far from home. The least popular method in terms of villagers' attitudes was vasectomy. Men especially were vociferous in their opposition to this method which they not infrequently equated with castration.

Since first acceptance 18 years ago, family planning has resulted in a cumulative 243 years of birth control use. Of the 57 women who have ever used non-permanent contraceptives, 19 or one-third have terminated contraceptive practice. However, for 16 of these 19, termination did not come until after as least one full year of contraceptive practice.

Table VIII.13 Methods of Contraception Ever Used in Baan Tang Chang

Method	N	%
Oral Contraception	46	69.7
I.U.D.	6	9.1
Injectibles	4	6.1
Vasectomy	3	4.5
Female Sterilization	2	3.0
Unspecified	5	7.6
Total	66*	100.0

* Includes four women who used two different methods.

For most of these women, as shown in Table VIII.14, the reason given for terminating use was the presence of side-effects, principally those accompanying pill use. From in-depth conversations with several village women it was clear that termination was most likely to result because side-effects themselves were often seen as an indication that the particular family planning mo was not skilled. In consequence, women suffering side-effects would consult, as for any other illness, another medical practitioner. The experience of one village woman in this regard is probably not atypical.

Chuat had originally received a three-month supply of birth control pills from a government health centre in a nearby market town. Following instructions to take one pill every day, after a few weeks she experienced several episodes of weakness and dizziness. Having heard similar complaints from other women, she attributed these effects to the pill. Consequently, she called for the local injection doctor. He advised her to stop taking the pill and gave her an injection. Her problems soon disappeared, though within another three months she was pregnant with her sixth child.

Table VIII.14 Reasons for Termination of Contraceptive Use

Reasons	N	%
Side-effects	14	73.7
Became pregnant during use	3	15.8
Inconvenient	1	5.3
Wanted additional children	1	5.3
Total terminators	19	100.0

Despite such problems, what Knodel and Debavalya (1978) have recently referred to as "Thailand's reproductive revolution" is clearly underway in the field study community. In Table VIII.15 family planning acceptance is cross-tabulated by cohort and parity. Given the relatively recent availability of family planning services to villagers, it is remarkable that over two-thirds of the 1942-1946 cohort have already used some modern contraceptive technique. That well over one-third of the next youngest cohort, who are at present only 25-29 years of age, have

Table VIII.15
Percent Ever Used Contraception by Cohort and Parity for Ever Married and Both Spouses Present

Birth Cohort (A.D.)	Age at Time of Survey	PARITY										Birth Cohort (B.E.)
		0-1		2-4		5-9		10-14		All Parity Levels		
		Ever Used	Total	Ever Used	Total	Ever Used	Total	Ever Used	Total	Ever Used	Total	
1922-1926	50-54	- (0)*	100.0 (2)	- (0)	100.0 (8)	4.2 (1)	100.0 (24)	- (0)	100.0 (1)	2.9 (1)	100.0 (35)	2465-2469
1927-1931	45-49	- (0)	100.0 (2)	14.3 (1)	100.0 (6)	19.0 (4)	100.0 (21)	28.6 (2)	100.0 (7)	19.4 (7)	100.0 (36)	2470-2474
1932-1936	40-44	- (0)	100.0 (5)	16.7 (1)	100.0 (6)	50.0 (12)	100.0 (24)	25.0 (1)	100.0 (4)	35.9 (14)	100.0 (39)	2475-2479
1937-1942	35-39	25.0 (1)	100.0 (4)	70.0 (7)	100.0 (10)	23.5 (4)	100.0 (17)	100.0 (1)	100.0 (1)	40.6 (13)	100.0 (32)	2480-2484
1943-1947	30-34	100.0 (3)	100.0 (3)	54.5 (6)	100.0 (11)	77.8 (7)	100.0 (9)	- (0)	- (0)	69.6 (16)	100.0 (23)	2485-2489
1948-1952	25-29	12.5 (1)	100.0 (8)	53.3 (8)	100.0 (15)	- (0)	100.0 (1)	- (0)	- (0)	37.5 (9)	100.0 (24)	2490-2494
1953-1957	20-24	- (0)	100.0 (9)	28.6 (2)	100.0 (7)	- (0)	- (0)	- (0)	- (0)	12.5 (2)	100.0 (16)	2495-2499
1958-1959	18-19	- (0)	100.0 (2)	- (0)	- (0)	- (0)	- (0)	- (0)	- (0)	- (0)	100.0 (2)	2500-2501
All cohorts	18-54	14.3 (5)	100.0 (35)	39.7 (25)	100.0 (63)	29.2 (28)	100.0 (96)	30.8 (4)	100.0 (13)	30.0 (62)	100.0 (207)	

* (N)

already used some method augurs well for continuing high levels of family planning acceptance.

Villagers were unanimous in expressing that their objective in practicing family planning was to curtail fertility rather than to space children or to defer childbearing to a later time. High acceptance rates at low parity — well over 50 percent of 2-4 parity women currently between the ages of 25 and 39 have used some method of birth control — are an indication that women were attempting to achieve relatively low family sizes. This is supported by responses to a question villagers were asked about the number of children they would like to have. The question asked was open-ended so that villagers were free to respond either with an exact number, a range, or a general statement about their family size desires. During the course of the survey it was clear that married villagers were much more successful in articulating responses to this question than were unmarried villagers. In Table VIII.16 the responses are presented for ever-married respondents with both spouses present in the community.

The more than one-third of married villagers who chose to respond with an exact number or range of children desired expressed a mean family size desire of only 3.15 children. A correspondingly large percentage of respondents stated that having few children was good. In the remainder of this section an effort will be made to identify some differentials between acceptors and non-acceptors of family planning. In so doing, some preliminary efforts to determine motivations which underlie fertility behaviour will be explored.

Landedness and landlessness are the most telling characteristics distinguishing villagers who have attempted to control fertility from those who have not. While no relationship exists between the relative amounts that landed families own and their propensity to practice contraception, landless villagers are much more likely to have attempted fertility control than are their landed neighbours. The relationship is most evident for families where the wife is in the prime reproductive ages of 20-44. For such women, as the data in Table VIII.17 show, there is a strong tendency²³ for contraceptive practice to be associated with landlessness,

23. The significance level of 0.056 computed for this cross-tabulation (corrected $\chi^2 = 3.64$ with one degree of freedom) lies just outside the bounds of normal acceptance levels for statistical significance.

Table VIII.16

Percentage Distribution for Ideal Family Size Responses for Ever Married
Villagers, Husband and Wife Present

	Male	Female	Total
<u>I. Exact Number of Range of Children</u>			
<u>Desired Specified</u>			
0-1	9.8	12.4	11.1
2-4	70.7	67.0	68.8
5-9	17.4	19.6	18.5
10+	2.3	1.0	1.6
Total	100.0	100.0	100.0
(N)	(92)	(97)	(189)
Mean	3.23	3.07	3.15
% of all respondents	36.7	38.0	37.4
<u>II. General Statements</u>			
It is good to have few children	36.4	41.5	39.2
It is good to have many children	21.8	24.6	23.3
Follow Nature	32.7	24.6	28.3
Ambivalent	9.1	9.2	9.2
Total	100.0	100.0	100.0
(N)	(55)	(65)	(120)
% of all respondents	21.9	25.5	23.7
<u>III. Direct Reference to Own Fertility</u>			
Have enough children already, using birth control	38.5	40.0	39.3
Have enough children already, not using birth control	61.5	60.0	60.7
Total	100.0	100.0	100.0
(N)	(65)	(80)	(145)
% of all respondents	25.9	31.4	28.7
<u>IV. Other</u>			
Unknown - No response	100.0	100.0	100.0
	(39)	(13)	(52)
% of all respondents	15.5	5.1	10.3
Total (N)	(251)	(255)	(506)

Table VIII.17 Percentage Distribution of Contraceptive Practice by Land Ownership Status for Currently Married Women 20-44 Years of Age

	Ever Used Contraception	Never Used Contraception	Total
Landless	50.0 (29)*	50.0 (29)	100.0 (58)
Landed	31.1 (19)	68.9 (42)	100.0 (61)
Total	40.3 (48)	59.7 (71)	100.0 (119)
*(N)			

the group of lowest economic standing in the community. As this finding is quite contrary to developmentalist expectations that contraceptive use correlates positively with higher economic status, there is a need for some further amplification.

In the life history survey, all respondents were asked about the land ownership status of their parents during the period of the respondent's childhood. By comparing parents' land ownership with respondent's present land ownership a measure of intergenerational economic change can be provided. As individuals' general orientation towards life is obviously affected not only by their current situation but by the circumstances and changing conditions which have surrounded them through their formative years, it was anticipated that such a summary measure could illuminate patterns of recent demographic change. In particular, intergenerational land ownership status offers a powerful and attractive explanation for the propensity to accept modern contraceptive practice.

In Table VIII.18 intergenerational land flows are presented for currently married women 20-44 years of age by contraceptive practice. There is an evident and significant differential between those women who have become recently landless and all other groups shown in the table. Having become recently disenfranchised, these women are apparently acutely aware of and able to act from their relatively disadvantaged economic position. Both the economic burden of raising children and the feeling that parents should have something to leave their offspring (khuan mii sombat hai) appear to be more strongly felt within this group than among

Table VIII.18

Percentage Distribution for Intergenerational Land Ownership
Status by Contraceptive Practice, Married Women 20-44 Years of Age

	Ever Used Birth Control	Never Used Birth Control	Total
Two generations landless	38.2 (13)*	61.8 (21)	100.0 (34)
Recently landless	66.7 (16)	33.3 (8)	100.0 (24)
Lost land but not landless	32.4 (11)	67.6 (23)	100.0 (34)
Remained same or gained land	29.6 (8)	70.4 (19)	100.0 (27)
Total	40.3 (48)	59.7 (71)	100.0 (119)

* (N)

those who have been landless for two generations. Similarly, those who are landed remain better able to support additional children as well as to provide for them in the future. It is possible that parity and age differences within these groups may bear some responsibility for the differential. The small numbers involved, however, obviate conducting further analysis while controlling for such other possible explanatory factors.

Land ownership differentials are one among many possible variables that intersect family planning decisions.²⁴ For example, another variable extracted from life history experiences that may demonstrate contraceptive use differentials was whether or not village women had engaged in seasonal wage labour migration. In the following section attention is turned to village mobility patterns and their potential for producing demographic change in the study community.

VIII.3 Circular Mobility in the Village Context

Circular mobility may be defined as movements which are "usually short term [and] repetitive or cyclical in character" (Zelinsky, 1971: 225).²⁵ As Gould and Prothero (1975: 41) have pointed out, "the principal difference between migration and circulation lies in the permanence of the former and the non-permanence of the latter". The conceptualization of circular movement first emerged in response to observations of mobility patterns among African tribal groups (Goldstein, 1978: 16). Since that time the study of circular mobility has remained almost an exclusive preserve of geographers working in Africa (e.g., Gould and Prothero, 1975; Prothero, 1978) and Melanesia (e.g., Bedford, 1973; Chapman, 1976). Recently, how-

24. However, attempts to explain contraceptive use patterns by education and occupation of husbands and wives showed no significant differentials.

25. Zelinsky and others (e.g. Gould and Prothero, 1975: 42) incorporate the mover's intention within their definition of circular mobility. In general, however, I would agree with Goldstein's (1978: 13) opinion that the "use of intention would ... be a very dangerous basis on which to distinguish between [permanent] migration and other forms of population movement, at least in the Asian setting". In consequence my efforts to collect quantitative data on circular movements of Tang Chang villagers were conducted retrospectively at the place of origin. Thus all moves recovered were ipso facto circular.

ever, recognition that "short distance moves and those which are more temporary in character ... often [constitute] a very high percentage of all moves and may have significant implications for the mover and for the places of origin and destination" (Goldstein, 1978: 3) has attracted the interest of demographers to studies of circular mobility (e.g., Hugo, 1975, 1978; Goldstein, 1978).

The need to overcome "indiscriminant transfer to Third World situations of not only the theoretical frameworks, but also the concepts, definitions, and data collection procedures derived from population mobility research carried out in Western countries" (Hugo, 1978: 1) was a particular concern in studying the mobility patterns of Tang Chang villagers. Field study allowed villagers' mobility behaviour to be "pursued from the real world up" (Chapman, 1977: 3). Though it was not possible to thoroughly investigate all the patterns observed, several distinct types of circular mobility may be briefly described. This is followed by more detailed study of one particular type of movement, seasonal migration.

VIII.3.1 A Variety of Circular Movements

Within the village context a variety of circular movements were observed. Though the greater volume of movements involved village residents "going and coming" (pai pai maa maa) to and from areas outside their community, there was also some repetitive movement of outsiders into and out of Baan Tang Chang. In the following some of these various patterns are briefly described.

Villagers differentiate between movements that are permanent (ophayop thawoon) and those which are temporary (ophayop chua khrau). Distinctions are readily made for example between migrants who have taken up permanent residence elsewhere and those who live in or out of the community in accordance with the seasonality of the rice cycle. These seasonal migrants were usually employed as wage labourers in industry or agriculture outside the community for several months of each year. There were others however, principally those engaged in self-employed up-country agriculture, who could not be easily classified. Because they regularly visited the community while committed to residence elsewhere, villagers could not easily identify them as either permanent or temporary migrants.

As Singhanetra-Renard (1977: 14) has observed in studying circular movements of Northern Thai villagers, categories of circular mobility "are not discrete from each other in terms of time and space". For purposes of the life history survey, however, it was necessary to impose some definitional clarity. Village respondents were specifically asked if during periods of reported residence elsewhere they had returned to the community to participate in village rice farming activities. If they had, they were classified as seasonal migrants. Otherwise, if they were away from the community for a year or more, they were classified as return migrants. In this way 17.9 percent of villagers were identified as having ever been return migrants and 35.5 percent as having ever been seasonal migrants.

Daytime commuting to nearby areas was another form of circular movement in which some villagers participated. Villagers were not however asked to quantify their movements in this regard. Nevertheless from field study observations it is possible to provide some details of these patterns. Though only the four boatmen who were Tang Chang residents made daily trips outside the village year-round, some villagers made periodic trips to sell goods, principally fish,²⁶ at nearby markets. Other villagers commuted periodically to wage labour jobs in nearby areas, working either as agricultural labourers in other villages or construction workers on government irrigation projects. One village man was a weekly commuter to a more distant area. For three or four days each week he worked as a money collector for an underground lottery in a province several hundred kilometres to the north.

Commuting out of the village was paralleled by regular commuting into the village. Several nearby market town residents regularly came through the community to sell vegetables and other goods house to house. Each week, on the eve of the Buddhist sabbath, a local market was held by merchants from a nearby market town. In addition, during rice planting or harvesting, boatloads of residents from nearby communities would arrive for daily hire as agricultural labourers. Also several groups of itinerant farm workers would camp for several weeks in the rice fields which they were hired to harvest.

26. The nearly 50 fishponds located in the community provided the villagers who owned them with the opportunity of periodically harvesting fish to sell in the market towns.

On the ground level then there was a considerable flow of movement into and out of the village. The volume of movement was not only of immediate economic significance, but also provided villagers with direct information about the opportunities afforded by life in other areas.

To an extent findings from field study are consistent with Chapman and Prothero's (1977: 5) observation that circulation appears to be a "time honoured and enduring mode of behaviour, deeply rooted in a great variety of cultures and found at all stages of socioeconomic change". The roots of circular mobility in Thailand are firmly established in the traditions of military service and corvee labour which regularly took villagers from their communities to serve the needs of the government. Similarly, the precedents for circulation are clearly evident in the traditions of monkhood service. While required to live at a home-based wat for the three months of Lent, there has always been wide latitude for monks to travel freely throughout the countryside during the remaining nine months of the year. Clearly, however, with improvements in transportation and growing economic opportunities the variety of movement patterns has greatly increased. Whether there are, as Zelinsky has hypothesized (1971: 221-22) "definite patterned regularities in the growth of personal mobility ... [that] comprise an essential component of the modernization process" is beyond the scope of this initial investigation of village patterns of circular mobility. In the remainder of this section primary attention is given to one major form of village circulation, seasonal patterns of migration.

VIII.3.2 Seasonal Movements of Tang Chang Villagers

Because life history interviews were conducted at the place of origin it was not possible to determine the extent which movements that were initially temporary have over time become permanent.²⁷ Never-

27. Informal discussions with former villagers at several destination sites gave preliminary indication that transition from temporary to permanent migrant was a common occurrence. A couplet scrawled across a factory wall where many former Tang Chang villagers worked aptly summarized their initial hopes and motivations: "We came because we wanted to, we go back when we have enough" (maa phro yaak-poo laew klap). With the passing of years and the acquisition of a new lifestyle, it appeared that relatively few would ever actually return to village life.

theless, the mobility histories of contemporary residents provide substantial detail about one form of circular mobility, seasonal migration, which has received little attention in Thai migration studies (see, however, Textor, 1956 and Singhanetra-Renard, forthcoming). Consequently, the following analysis of seasonal movements is presented as an illustrative example of the findings which emerge from studies conducted at the ground level.

Seasonal migrants share several characteristics with permanent migrants. Just as male dominance has characterized permanent movers into and out of the community, so have more males than females been involved in seasonal migration. As shown in Table VIII.19 this sex differential has been maintained even among younger villagers. Also consistent with patterns of permanent movement are the ages at which villagers are likely to first become seasonal migrants. Thus as shown in Table VIII.20 most villagers who had ever been seasonal migrants made their first move before reaching 25 years of age. However, from Table VIII.21 it is clear that many villagers continue to be seasonal migrants through the years of later adulthood. The distribution of cumulative years experience as seasonal migrants in Table VIII.22 shows that especially among villagers in their prime adult years seasonal movement has become for many a permanent way of life.

Annual crude rates of seasonal migration may be calculated by relating the occurrence of these life history events to person-year totals computed from genealogical census data. In Table VIII.23 these rates are presented by five-year periods for both occurrences of first movement and cumulative years of seasonal mobility participation.²⁸ The largest upsurge in seasonal migration occurred in the early 1960s with a tripling of the numbers of villagers beginning seasonal migration. By the most recent period over 13 percent of all villagers were regularly away from the community for several months of each year. The impact was not unnoticed by villagers who often remarked how empty the community was during the agricultural slack seasons.

28. Though children often accompany their parents, they were not counted as seasonal migrants. Thus the computed rates reflect levels of adult movement only.

Table VIII.19

Percentage Distribution of Seasonal Migrants by Sex

<u>Under 30 Years of Age</u>			
	<u>Never Seasonal Migrant</u>	<u>Ever Seasonal Migrant</u>	<u>Total</u>
Male	41.8 (38)*	58.2 (53)	100.0 (91)
Female	61.5 (80)	38.5 (50)	100.0 (130)
Total	53.4 (118)	46.6 (103)	100.0 (221)
<u>30+ Years of Age</u>			
	<u>Never Seasonal Migrant</u>	<u>Ever Seasonal Migrant</u>	<u>Total</u>
Male	61.9 (156)	38.1 (96)	100.0 (252)
Female	73.4 (254)	26.6 (92)	100.0 (346)
Total	68.6 (410)	31.4 (188)	100.0 (598)

* (N)

Table VIII.20

Seasonal Migration for Age at First Movement: First Time Movers as Percent of Current Community Residents by Selected Age Groups

Period A.D.	15-24			25-39			40-64			Period B.E.
	No. of First Time Movers	Av. No. of Residents per Year	%	No. of First Time Movers	Av. No. of Residents per Year	%	No. of First Time Movers	Av. No. of Residents per Year	%	
1932-1936	0	70	-	1	54	1.9	1	14	7.1	2475-2479
1937-1941	1	101	1.0	1	71	1.4	0	30	-	2480-2484
1942-1946	2	115	1.7	2	110	1.8	0	49	-	2485-2489
1947-1951	5	130	3.9	4	160	2.5	1	71	1.4	2490-2494
1952-1956	9	138	6.5	7	202	3.5	1	108	0.9	2495-2499
1957-1961	11	125	8.8	10	227	4.4	1	159	0.6	2500-2504
1962-1966	18	113	15.9	29	240	12.1	15	214	7.0	2505-2509
1967-1971	35	144	24.3	16	228	7.0	16	275	5.8	2510-2514
1972-1976	49	164	29.9	25	218	11.5	30	342	8.8	2515-2519

Table VIII.21

Seasonal Mobility: Total Years of Movement as Percent of Person-Years Lived in the Study Community by Current Residents Within Selected Age Groups

Period A.D.	15-24			25-39			40-64			Period B.E.
	Years of Seasonal Movement	Total Person-Years	%	Years of Seasonal Movement	Total Person-Years	%	Years of Seasonal Movement	Total Person-Years	%	
1932-1936	0	528	-	2	372	0.5	2	440	0.5	2475-2479
1937-1941	1	708	0.1	7	447	1.6	5	584	0.9	2480-2484
1942-1946	9	735	1.2	16	728	2.2	7	632	1.1	2485-2489
1947-1951	23	739	3.1	34	1065	3.2	11	716	1.5	2490-2494
1952-1956	31	735	4.2	69	1381	5.0	28	911	3.1	2495-2499
1957-1961	42	782	5.4	104	1481	7.0	73	1239	5.9	2500-2504
1962-1966	58	754	7.7	205	1421	14.4	133	1415	9.4	2505-2509
1967-1971	120	885	13.6	302	1197	25.2	273	1533	17.8	2510-2514
1972-1976	298	837	35.6	375	1087	34.5	535	1719	31.1	2515-2519

Table VIII.22 Percentage Distribution of Cumulative Years of Seasonal Migration by Selected Age Groups

Years of Seasonal Migration Experience	Age at Time of Survey			Total
	Under 30	30-39	50+	
1-5	76.7 (79)*	59.2 (74)	61.9 (39)	66.0 (192)
6-10	22.3 (23)	20.8 (26)	23.8 (15)	22.0 (64)
11-20	1.0 (1)	16.0 (20)	9.5 (6)	9.3 (27)
20+	- (0)	4.0 (5)	4.8 (3)	2.7 (8)
Total	100.0 (103)	100.0 (125)	100.0 (63)	100.0 (291)

*(N)

Table VIII.23
Annual Crude Rates of Seasonal Migration (per 1000 Person-Years) by Five-Year Periods

Period A.D.	First Movement		Cumulative Years of Movement		Total Person-Years Lived	Period B.E.
	No. of First Moves	Crude Rate of First Movement	No. of Years of Seasonal Migration	Crude Rate of Seasonal Migration		
1932-1936	2	0.2	4	0.6	7041	2475-2479
1937-1941	2	0.3	13	1.7	7675	2480-2484
1942-1946	4	0.5	32	3.9	8201	2485-2489
1947-1951	10	1.1	68	7.8	8710	2490-2494
1952-1956	17	1.8	128	13.6	9446	2495-2499
1957-1961	22	2.2	219	21.7	10075	2500-2504
1962-1966	62	6.0	396	38.4	10318	2505-2509
1967-1971	67	6.7	695	68.3	10176	2510-2514
1972-1976	104	11.4	1208	132.9	9089	2515-2519

The increase in seasonal migration since 1962 has resulted primarily from the growing demands for cheap, manual labour to fuel rapid economic expansion. As shown in Table VIII.24, the majority of village seasonal migrants have worked as construction workers in Bangkok. Longtime association with particular construction firms virtually assures any villager from Baan Tang Chang a job in the off-season if he or she wants it. Agricultural developments in up-country regions have also created seasonal demands for workers to grow, harvest, and process crops for export. The most recent expansion in economic opportunity has occurred in the province of Ganchanaburi some 50 kilometres west of the field site. In this province villagers can readily find seasonal employment as factory workers or farm hands. As field site visits to several destination sites confirmed, seasonal migrants tend to cluster in a few factories or farm areas where they have been preceded by other Tang Chang villagers.

Villagers were unanimous in stating that economic motives were the primary factors distinguishing seasonal migrants from those who remained at home year-round. Their views are strongly supported by life history data. In Table VIII.25 a significant inverse relationship is shown for ever-married seasonal migrants by village land ownership — landless villagers are most likely to have taken advantage of seasonal migrant wage labour opportunities, while declining levels of participation are shown for landed villagers in accordance with the amount of their holdings.

A similarly inverse relationship is shown in Table VIII.26 when the migration experiences of ever-married villagers are cross-tabulated by intergenerational land flows. Nearly half of all villagers who have been landless for two generations have engaged in seasonal migration compared to only slightly more than one-quarter of those landed residents who have stayed the same or made land ownership gains relative to their parents. Landlessness or parents is likely to have promoted participation in seasonal migration from very young ages. Thus, villagers landless for two generations are significantly more likely to have migrated seasonally than any other group.

For the most part, seasonal migration provides the poorest villagers with a hedge against absolute poverty. For most it is a staying action allowing them to maintain their life as villagers while compensating

Table VIII.24. Percentage Distributions for Patterns of Seasonal Mobility by Period

Period A.D.	Construction work in Bangkok	Other temporary employment in Bangkok	Up-country agriculture in Ganchanabari Province	Other temporary work in Ganchanabari Province	Other seasonal work in nearby place	Other seasonal work in other distant (>30k.) place	Total	Period B.E.
1932-1936	-	-	-	-	50.0 (1)	50.0 (1)	100.0 (2)	2475-2479
1937-1941	-	50.0 (1)	-	-	50.0 (1)	-	100.0 (2)	2480-2484
1942-1946	60.0 (3)	-	-	-	40.0 (2)	-	100.0 (5)	2485-2489
1947-1951	66.7 (8)	-	-	-	25.0 (3)	8.3 (1)	100.0 (12)	2490-2494
1952-1956	88.2 (15)	-	-	-	-	11.8 (2)	100.0 (17)	2495-2499
1957-1961	65.4 (17)	-	-	11.5 (3)	11.5 (3)	11.5 (3)	100.0 (26)	2500-2504
1962-1966	48.6 (35)	5.6 (4)	-	1.4 (1)	12.5 (9)	31.9 (23)	100.0 (72)	2505-2509
1967-1971	63.2 (60)	4.2 (4)	3.2 (3)	1.1 (1)	8.4 (8)	20.0 (19)	100.0 (95)	2510-2514
1972-1976	47.6 (68)	4.2	14.0	4.2 (6)	15.4 (22)	14.7 (21)	100.0 (143)	2515-2519
Total	55.1	4.0	6.1	2.9	13.1	18.7	100.0 (374)**	

* (N)

** Totals to more than the total ever seasonally migrate because many villagers have participated in more than one type of seasonal migration pattern.

Table VIII.25

Percentage Distribution of Seasonal Migration Experiences of
Ever-Married Villagers by Land Ownership

	Never Seasonal Migrant	Ever Seasonal Migrant	Total
Landless	59.3 (169)*	40.7 (116)	100.0 (285)
1-10 Rai	64.2 (86)	35.8 (48)	100.0 (134)
11-30 Rai	68.1 (47)	31.9 (22)	100.0 (69)
30+ Rai	94.6 (87)	5.4 (5)	100.0 (92)
Total	67.1 (389)	32.9 (191)	100.0 (580)

* (N)

Table VIII.26

Percentage Distribution of Seasonal Migration Experiences of
Ever-Married Villagers by Intergenerational Land Flows

	Never Seasonal Migrant	Ever Seasonal Migrant	Total
Two generation landless	54.9 (79)*	45.1 (65)	100.0 (144)
Recently landless	63.3 (88)	36.7 (51)	100.0 (139)
Lost land, but still landed	76.4 (120)	29.1 (37)	100.0 (157)
Remained the same or gained land	78.0 (99)	27.7 (38)	100.0 (137)
Total	66.9 (386)	33.1 (191)	100.0 (577)

* (N)

for the increasing landlessness²⁹ that has been the combined result of increase in both village population and absentee landlordism.³⁰ For better-off villagers seasonal migration provides a source of supplementary income or, as some informants state, a testing period for exploring opportunities for economic advancement via different occupational pursuits. There is some evidence, however, that factors other than just economic ones have attracted villagers to the opportunities of seasonal migration.

Unmarried villagers do not show the same economic differentials for seasonal migration as do married villagers. As shown in Table VIII.27 while the inverse relationship between seasonal migration and economic status is maintained when married villagers are cross-tabulated with parents' land ownership, it disappears for unmarried villagers. Thus while economic standing may influence migration tendencies among unmarrieds — evinced by the higher proportions of seasonal migrants whose parents are landless — other factors intervene to cause relatively high proportions of unmarried villagers from landed families to also engage in seasonal movement. These other factors appeared to be the social opportunities and benefits that accompany seasonal migration.

Not only does seasonal work elsewhere provide relief from year-round residence in the village, but among other things it provides a greater range of choice for prospective marriage partners. Young unmarried villagers particularly seemed eager to engage in seasonal wage labour, whether or not they would derive substantial economic benefits. As one unmarried woman in her late twenties related, even though she invariably returned from seasonal work as a Bangkok seamstress with nothing saved from her earnings, she greatly enjoyed it despite the burden of a twelve-hour workday seven days a week. It was simply something different to do, a welcome change from village life.

29. From 37.4 percent landlessness within their parents' generation contemporary landlessness has increased to 47.8 percent among ever-married villagers.

30. While land deeds and informant reports revealed that significant amounts of land were lost to market town creditors in early periods, in contemporary times absentee landlordism appears to have increased primarily through the out-migration of landed villagers who maintain title and collect rents for their village lands.

Table VIII.27

Percentage Distribution of Seasonal Migration Experiences for Married
and Unmarried Villagers by Parents' Land Ownership

<u>Ever Married</u>			
	Never Seasonal Migrant	Ever Seasonal Migrant	Total
Landless	55.4 (129)*	48.8 (104)	100.0 (233)
1-10 Rai	62.9 (44)	37.1 (26)	100.0 (70)
11-30 Rai	70.6 (89)	29.4 (37)	100.0 (126)
30+ Rai	76.3 (148)	23.7 (46)	100.0 (194)
Total	65.8 (410)	34.2 (213)	100.0 (623)
<u>Never Married</u>			
	Never Seasonal Migrant	Ever Seasonal Migrant	Total
Landless	54.2 (32)	45.8 (27)	100.0 (59)
1-10 Rai	63.8 (30)	36.2 (17)	100.0 (47)
11-30 Rai	57.1 (28)	42.9 (21)	100.0 (49)
30+ Rai	64.9 (24)	35.1 (13)	100.0 (37)
Total	59.4 (114)	40.6 (78)	100.0 (192)

* (N)

Table VIII.28

Percentage Distribution of Medical Treatment Preferences and Contraceptive Use by Seasonal Migration Experience

<u>Medical Treatment Preference</u>							
<u>for Serious Illnesses Occurring at Ages 20 or Over Within the Period 1951-1976 (2495-2519) *</u>							
	<u>Tradit- ional</u>	<u>Local Govern- ment</u>	<u>Local Non- Govern- ment</u>	<u>Provin- cial Hospital</u>	<u>Bangkok or Other Hospital</u>	<u>Private Clinic</u>	<u>Total</u>
Never Seasonal Migrant	34.5 (48) **	6.5 (9)	23.7 (33)	9.4 (13)	17.3 (24)	8.6 (12)	100.0 (139)
Ever Seasonal Migrant	31.1 (19)	9.8 (6)	27.8 (17)	11.5 (7)	11.5 (7)	8.2 (5)	100.0 (61)
Total	33.5 (67)	7.5 (15)	25.0 (50)	10.0 (20)	15.5 (31)	8.5 (17)	100.0 (200)
<u>Contraceptive Use</u>							
<u>for Currently Married Women Age 20-44, Husband Present</u>							
	<u>Never Used Contraception</u>		<u>Ever Used Contraception</u>				<u>Total</u>
Never Seasonal Migrant	61.4 (51)		38.6 (32)				100.0 (83)
Ever Seasonal Migrant	56.9 (29)		43.1 (22)				100.0 (51)
Total	59.7 (80)		40.3 (54)				100.0 (134)

* B.E.

** (N)

Goldstein has directed attention to the need for investigating the impact that circular migrants may have on their places of origin: "To what extent does the interchange ... resulting from return movement by ... circular migrants contribute to development and modernization of rural areas through the introduction of new ideas and behaviour?" (1978: 60). While clearly the opportunity of outside wage labour employment alleviated the economic plight of some villagers, the experience itself did not seem to markedly differentiate seasonal migrants from neighbours who remained at home throughout the year. The choices villagers made concerning medical treatment and modern contraception support this contention. With regard to both, as shown in Table VIII.28, villagers who had ever been seasonal migrants showed no significant behavioural differentials from villagers who had never been seasonal migrants. In general, seasonal migrants had little experience with life beyond the confines of their work activities. They often lived together at work sites with other villagers and except for their work activities were extremely marginal participants in the broader societies in which they temporarily lived. It may well be that those who had in some sense been "modernized" by the experience were the ones who opted for permanent migration. In this regard there is an obvious need for further study to be conducted at the place of destination.

VIII.4 Conclusions

In this chapter use has been made of both quantitative and qualitative data collected during field study. The life history matrix survey provided an extensive base from which to quantitatively document and analyze patterns of village behaviour with regard to medical treatment, contraceptive usage, and seasonal mobility decisions. Case studies were used to illustrate the kinds of alternatives available to villagers and some of the factors which affected their behaviour. While quantitative analysis of life history data revealed several interesting patterns of differential behaviour, qualitative insight provided a solid base from which these findings could be interpreted.

The longitudinal dimension afforded by life history data has shown Tang Chang villagers to be adaptive and receptive to modern opportunities for effecting demographic change in their own lives. Villagers have shifted rapidly to modern forms of medical care and birth control;

the seasonal migrant labour opportunities afforded by an expanding economy has attracted increasing numbers of villagers. Though change has been rapid, traditional patterns of behaviour have not been discarded. Under-utilization of government health facilities has been explained in terms of villager preferences for the dyadic and personal bonds of patron-client relationships. Seasonal, like permanent, migration is characterized by greater male than female movement.

Land ownership provided a salient variable for differentiating some patterns of village behaviour. It was found that landless villagers are significantly more likely to use modern contraception or to engage in seasonal migration than landed villagers. In particular, differential analysis in terms of intergenerational land flows provided some further insights into the motivations underlying these patterns of behaviour. Though further study is needed to determine whether such differentials are characteristic of Thai villagers generally, the finding that the poorest villagers have taken the most advantage of opportunities presented by modern change is itself most interesting.

In the following chapter, a more thoroughly qualitative investigation of motivations underlying patterns of village demographic behaviour is undertaken. The objective is to demonstrate both the value of incorporating non-quantitative procedures into broader demographic research designs and to explore more thoroughly the cultural context in which villagers live as a means to gain further understanding of why they behave demographically as they do.

CHAPTER IX

RELIGION, RITUAL AND DEMOGRAPHIC CHANGE IN BAAN TANG CHANG:
A SPECULATIVE INVESTIGATION

... their spiritual beliefs and their habits of every day are so intimately mingled that they seem not to have any sensation of passing from one to the other.

Claude Levi-Strauss

In previous chapters of this dissertation demographic change in Baan Tang Chang has often been related to economic developments occurring both within and outside the study community. The approach taken in this chapter is to view demographic change primarily from a cultural perspective. The purpose is not to deny the importance of economic development in producing demographic change. Rather the objective is to recognize that development itself, like the ability to adapt to new conditions by the exercise of alternative strategies of demographic behaviour, may be impeded or facilitated by the a priori cultural content of a particular social group.

Culture is a cumulative product of interaction among several factors - historical development, ecological adaptation, political evolution, genetic endowment, idealogical transmission, and accident, chance or fate. In concert these factors produce over the span of centuries a particular set of customs, characteristics, or traits which distinguishes one group of people from another. In this chapter specific character traits or behavioural modes held in common by Thai villagers are traced via particular cultural features to implications they hold for demographic change. To this end I have selected religion and ritual as salient features of village life from which to pursue explanations of village demographic change. It is not thereby implied that these exercise the only or even the most powerful influence upon demographic behaviour. Rather these were aspects of village life about which I collected sufficient information to warrant this kind of in-depth exploration.

IX.1 Buddhism and Demographic Behaviour

In several instances direct correlations have been made between particular religious beliefs and practices and specific patterns of demographic behaviour. For example, while pro-natalist injunctions may be found in most religions, Catholic opposition to birth control has been directly related to the high fertility of some population groups (see Day, 1968). Similarly, the strongly conservative attitudes and practices fostered by the Islamic faith have been seen as a bulwark against the spread of modern contraceptive use in Moslem populations (see Kirk, 1968: 235-236).¹ Comparable efforts to draw such direct relationships between demographic behaviour and Buddhist beliefs or teachings have, however, been notably less successful.

At first glance the Buddhist doctrine of reincarnation provides an attractive peg upon which to hang explanations for demographic behaviour. As one Thai Buddhist scholar, Suriyabongs (1960: 303f. cited in Ling, 1969) has argued, given the realms through which beings progress as their store of merit increases, population growth, because humans are the highest in rank order, should be welcomed as a sign that the moral state of the universe is improving. More simply put, as more people are born into the world, the more opportunity there is for souls to work out their karmic merit through rebirth. However, as Ling (1969: 57) attests and general observation affirms, the doctrine of reincarnation does not result in avowed pro-natalism among either Buddhist monks or Buddhist laymen in Thailand.

The Buddhist proscription against taking life has been seen as an impediment to exercising fertility control in some societies (see Ling, 1969: 57). In Thailand, however, even though there was a period of initial reluctance to institute a national family planning program, the reasons were political rather than religious. Widespread popular approval of modern contraceptive practices documented by several surveys is consistent with Ling's finding that "in Thailand it is commonly asserted that there is nothing in Buddhist doctrine against the practice of contraception" (1969: 57).

1. A study of Thai-Moslems, for example, attributes unfavourable attitudes toward contraceptive use among males to a basic conservatism fostered by Islamic teachings (Suvipakit, 1969: 27; Suvipakit and Fawcett, 1969: 39).

Though Buddhist emphasis upon the sanctity of life appears to directly contravene abortion as a means of fertility control, survey evidence, field study information, and current government policy indicate that abortion is not the important moral issue in Thailand that it is elsewhere. From a survey conducted in a rural Central Plains community in the mid-1960s, Burnight *et al.* (1968) present data that indicate possibilities of a high incidence of induced abortion and that demonstrate high approval of abortion under certain conditions. A study based on 1972 sample survey data shows that high approval of abortion under certain conditions prevails nationwide (Burnight and Leoprapai, 1975). Mougne (forthcoming), during field study in Northern Thailand, uncovered evidence of a high incidence of abortion as a traditional means of fertility limitation. Though the issue was not pursued at great length during my field study, there were several indications that abortion was accepted as a viable alternative for preventing births in Baan Tang Chang. In-depth interviews with local midwives yielded a wealth of information on traditional abortion techniques and abortifacients. One informant stated that medicines to "promote menstrual regularity" which were sold in nearby market town pharmacies were sometimes used by village women for purposes of abortion.

Despite widespread recognition that abortion is being used with increasing frequency in Thailand as a birth control measure, neither the Buddhist hierarchy nor the government has spoken out strongly on this issue. In a useful summary of available information on abortion in Thailand, Cook and Leoprapai (1974) point out that abortion in Thailand is legally permitted under certain circumstances and that some government officials have publicly spoken on the need for further liberalization. More recently, using a strategy similar to that employed in the late 1960s to make family planning services available prior to being officially approved by the government, a private family planning concern has operated a well-known and modern-equipped abortion clinic in Bangkok since 1974. To date no objections from either government or Buddhist officials have been raised. Though the moral issue is confounded by "the general Buddhist notion that the seriousness of the act of taking life increases with the size, complexity, and even sanctity of the being whose life is taken" (Ling, 1969: 58), it is probably equally affected by a general cultural proclivity for leaving decisions to individuals.

From the above discussion it is clear either that some traditional religious doctrines have been contravened or modified, or that the mechanisms which operate to translate religious belief into attitude and action are more subtle than is first apparent. In the following some particular characteristics of Thai villagers relevant to observed patterns of demographic behaviour are examined within the context of their religious beliefs and practices. In the process an attempt is made to illuminate the motivations that underlie village demographic change.

IX.1.1 Buddhist Individualism and Demographic Behaviour

Observers of Thai society have not failed to emphasize that individualism, non-conformity, and freedom of individual actions are most notable characteristics of Thai behaviour (e.g. Mole, 1973). Phillips (1965: 55) most ably describes this individualistic trait: "Siamese are, first and foremost, free and independent souls. Much of the time they fulfill each other's expectations, but this is only because they want to, not because others expect it of them or because the situation demands it". This individualistic character is perfectly confluent with, if not resultant from, villager conceptions of such Buddhist beliefs as karma (kam) and reincarnation (koet mai) and adherence to such Buddhist practices as the making of merit (tham bun).

The well-regarded Thai historian Vella has pointed out that the austere philosophical basis of Buddhism "that the goal of existence ... is the cessation of consciousness" could hardly have won widespread popularity among the Siamese had it not been translated into some more attractive form (1957: 31-32). The original Buddhist conception of reincarnation — it is not the individual himself who is reborn " for there is no individual; it is not the soul that is reborn, for there is no soul; it is the mass of actions, or moral consequences, or karma, that passes from one state to another" (Vella, 1957: 31) — was hardly formulated for its mass appeal. In coming to the Thai people, however, rebirth was:

"drastically reinterpreted, becoming a belief in the transmigration of individual souls as separate entities. Karma became a personal balance sheet that a person sought to improve in order to be reborn in a higher status. Nirvana, the highest goal in the doctrine had little appeal for the average Siamese, who would prefer to be reborn as a prince or in some similarly worldly state". (Vella, 1957: 32)

Though obviously other factors such as political developments, morphological realities and perhaps even a generally low population density² also intervened, the stage was then set, at least philosophically, for the full emergence of Thai individualism.

Though Vella was addressing his comments to Buddhism as practised by Siamese living in the reign of Rama III (1824-1851), his description remains an accurate portrayal of contemporary villager beliefs. Villagers most commonly express their allegiance to Buddhism by their concern for participating in merit-making opportunities that will improve their karmic stock. While merit is gained through activities which support the monkhood and the wat, merit may be lost when any of the five precepts of Buddhism³ are transgressed. If one's karmic balance shows improvement over the course of this life one can expect to be born into better circumstances in the next life (chaat naa); if more merit has been lost than gained the circumstances of the next incarnation will be considerably worsened.

In consequence, the concept of karma provides villagers with a sense of individual meaning and justice: "their own life conduct is a decisive factor in their fortunes, evil and good, along the path of countless incarnations of life" (Ingersoll, 1966; 223). The "paucity of durable,

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2. Bunnag (1973: 183) diverges from interpretations which explain Thai individualism in terms of Buddhist ethics by offering the following comparison between findings from Leach's study of a Buddhist Sinhalese village and the situation for rural Thai settlements: "Leach has shown for example that in Pul Eliya social groups are formed to protect individual interests in scarce property holdings, and to ensure the day-to-day cooperation essential for the maintenance of the irrigation system. These factors are not operative in village Thailand where neither technological specialization nor economic need requires the formation of groups to ensure continuous co-operation, and to protect the interests of coming generations ... Thailand has a tradition of abundant natural resources, an economy in which for centuries labour not land was the scarce factor". In my view this does not negate the importance of the religious ethic as a partial explanation for the development of particular social characteristics, but rather shows how other factors may also exercise a complementary or contradictory effect.
 3. The five Buddhist precepts are: 1) refrain from taking life, 2) refrain from stealing; 3) refrain from improper sexual relations, 4) refrain from lying, and 5) refrain from intoxicants.

binding mutual commitments between individuals (in village society)" (Piker, 1969), may be related to this individualistic orientation.

Because a person's store of merit, whether from actions taken in this or previous lives, is primarily his own doing, villagers are largely nonjudgemental of and indifferent to each other's actions. Furthermore, "the Buddhist emphasis on privacy of individual action and responsibility" (Phillips, 1967: 363-4) is consonant with, if not causative of, the absence of corporate structures in village society. There exists, for example, no extended family or other permanent corporate groups to strongly influence, intervene, or exercise control over individual conduct. Even within nuclear families, child-rearing practices are notable for their lack of disciplinary content. As Piker (1969: 394) has reconstructed socialization patterns in Thailand, an initial two or three years of unqualified indulgence is followed by an abrupt, and to the child unpredictable, transition where "dependency is effectively ruled out but no viable or attractive alternative is made available to the child".

Continuing participation in the only functionally important groups in village society, the monkhood and the family household, is itself voluntary. Allegiance to the monkhood is a temporary commitment which the individual is free to leave at any time. The uncertainty which Tang Chang parents expressed about the intentions of their children to provide for them in old age is justified by those not infrequent occurrences when children, having once left the household, were never to be seen or heard from again. In the village society, "there is nothing sacrosanct about any human tie ... even that which exists between parent and child" (Phillips, 1965: 88). In consequence, villagers typically neither seek advice from nor offer consultation to others, even members of their own immediate family. In deciding upon an action it is expected that each individual will, in accord with the Thai proverb, be a true Thai by following his own heart. In the following some implications that Thai individualism has had for demographic behaviour will be briefly discussed.

The tradition of arranged marriage, often contracted at childhood, which epitomized the concern of corporate kinship groups in India and China for exercising control over their progeny, did not survive among the Thai even though their cultural heritage is linked to both these societies. Though there is some evidence, both from other observers (e.g. Chamrieng, 1962) and

from field site informants, that parental control over children's decisions to marry has declined in recent years, the longstanding traditions of elopement and marriage-by-capture⁴ indicate that the means for circumventing parental influence have always existed. Kaufman (1960: 151) estimates that about 20 percent of the marital unions in his field study area had been effected through elopement.

Like many other aspects of Thai culture, while the formal structure of marital arrangements indicates one thing, the actual occurrence indicates quite another. Once a marriage proposal has been accepted, negotiations and ceremonial visits between the respective households of the bride and groom seem to indicate that their respective families are greatly concerned with and have greatly influenced the decision to marry. Actually, as ground level observations of courting and marriage rituals indicated, and as discussions with prospective marriage partners and their families verified, the decision in most cases is almost completely that of the two individuals most concerned. The realization that elopement is a ready alternative to conducting a formal ceremony and the widely recognized alacrity with which parents accommodate themselves to elopement once it is a fait accompli influence the extent to which parents can thwart a marriage of which they do not approve or promote one that their children do not want.

In most instances of first marriage recognition of the union is accomplished through three days of elaborate festivities which culminate in a formal ceremony attended by monks, relatives, and friends. This is preceded by brideprice negotiations which are usually carried out between the parents of the prospective bride and an emissary of the hopeful groom. In cases where land ownership is at stake, careful quid pro quo consideration is given in determining how much money will be paid in exchange for what amount of land the bride will bring with her.⁵

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4. As revealed through many stories villagers told of such occurrences, complicity is usually involved between the "captured" female and the "capturing" male. However, instances of what is effectively kidnap and rape to circumvent a woman's objections to a particular marriage are not unknown.
 5. One part of the brideprice, the sin sot, goes to the parents and is usually used to help defray wedding costs. The other part, khaa tang man, goes directly to the marrying daughter to use as she wishes, establishing a precedent for her economic independence within the marital union.

Unlike societies that emphasize extended family structure, bride-price payment in village Thailand does not signify corporate involvement in the marriage contract. The brideprice accrues only to the bride and her parents, and in the event of divorce is not at any rate returned to the groom. Though relatives join together to prepare and participate in wedding festivities, they have no vested interest in either the brideprice arrangements or in the progeny that will result from a successful union. Thus, in the likelihood of a subsequent divorce,⁶ typically indicated by the occurrence of a single, virulent quarrel, no efforts to mediate are attempted by other family members. Even the parents of the bride and groom remain noticeably indifferent to the marital problems of their children. Parents recognize that, like the forces which bring a couple together, those driving them apart are primarily the concern only of the two individuals involved.

Given the shared intimacy of marriage, it is obviously difficult to assess how deeply involving is the marriage bond in comparison with other interpersonal village relationships. How much husband and wife influence each other's behaviour, and how much they maintain individual prerogatives are subjects in need of further study. However, from close observation of several village families there appeared to be little effort invested in dominating or directing spouses, or other members of the household, and much toleration of personal desires.

The division of household labour was accomplished much in accordance with Kingshill's observation that "villagers seem to know when or where to work" (1965: 34). The converse is that, within the recognized obligation that certain tasks must be performed to keep the household functioning, household members generally appeared to do what they wanted when they wanted to.

6. Anthropological evidence indicates that divorce in Thailand is relatively easy and frequent (Wijeyewardene, 1967: 68). Life history data yielded a rate of 6.8 divorces per 100 marriages. Because respondents were not closely questioned on this matter, it is likely that a number of divorces occurring in the first years of marriage were omitted. While 73.3% of divorced males subsequently remarried, only 38.2% of females did so. Though divorce levels seem relatively unchanged over time, females appear more likely to remarry in recent years than they were in the past.

Even major household economic decisions seemed to be greatly influenced by Thai individualistic orientations as well as other concepts of Buddhist derivation. As only males can become monks and thereby achieve enlightenment, men are popularly considered a higher incarnation than women. As Bunnag (1970: 13) has stated "women are believed to be the inferior sex, because they epitomize those sensual pleasures which form the chief obstacle to any man's spiritual advancement".⁷ However, like other aspects of village life initial appearances do not always lead to what one would expect. Because of their inferior status, women are considered more attached to the mundane concerns of life, men more to the spiritual domain. Thus though husbands by virtue of their higher status occupy the titular role of family head, wives appear to exercise a predominant role in making family economic decisions. In almost all cases, the wife controls family income and savings. Though major family economic decisions likely involve, as one male informant related, consultation between husbands and wives, it may well be that wives have the greatest say in such decisions. I was told for example of several instances where wives successfully overrode the objections of husbands in taking particular courses of action involving the expenditure of household funds. If women play such a dominant role in family economic affairs, it is consistent with the observation that village women "are by and large more active economically than men anyway"⁸ (Piker, 1975: 322; see also Kirsch, 1975: 174-176).

With regard to the practice of modern contraception, wives appeared to act independently of their husbands. Many husbands stated specifically that the practice of fertility control was completely up to their wives (laew tae khao). As she is the one most burdened by child-

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7. Even the Buddha apparently had strong reservations about the role that women should be allowed to play in pursuing a spiritual life. When his wife and mother implored him to allow them to enter the religious order that had been established for men, the Buddha refused them on three separate occasions. Finally, bowing to the logic of an assistant's question, "Is the Buddha born into the world only for the benefit of men?", the Buddha relented and laid down regulations for an order of nuns (Cheney, 1974: 65).
 8. However, as shown in the previous chapter, this greater economic activity of women does not result in equal or greater participation than males in seasonal wage labour mobility.

bearing and childraising, as well as the controller of the family purse-strings, males often view the decision as more within her purview than their own. For their part, women most frequently stated that the main reason for using contraception was to avoid the burden of rearing additional children (bea liang luuk). Thus both the high levels of contraceptive use and the dominance of female methods may be related to the independent positions that females occupy within the nuclear family.

In a broader sense, the individualistic orientation of Thai villagers has enabled them to adapt rapidly to the forces of modern change. As Jacobs (1971: 290) points out, "the Thai Buddhist concept of individual, personal accountability for one's moral perfection is consistent with Thai individual opportunism which sanctions or at least allows the pursuit of personal advantage whenever opportunity presents itself". In the following, this inherent pragmatism of Thai villagers is traced to religious origins and examined for demographic implications.

IX.1.2 Villager Pragmatism and Demographic Behaviour

The duality of transformation with continuity that Tambiah (1976) has noted as characteristic of the impact that Buddhism has had on formation of the Thai polity is equally applicable to the effects that Buddhism has exercised over the content and character of village life. Buddhism, as the most viable of the remaining village-level institutions in Central Plains communities, ties villagers to the traditions of the past. At the same time however, it promotes a deeply rooted pragmatism that has enabled villagers to adapt rapidly to changes in the wider society. Philosophically, the basis of this pragmatism is contained in the predominating Buddhist viewpoint that "everything has a cause and a consequence, and thus everything must conform to the law of change and impermanence" (Moore, 1974: 197). In combination with an individualism that tolerates a wide latitude of behavioural difference, this transigent orientation to life results in a style of behaviour that is highly receptive to and adaptive of change.

Adaptability has been as much a hallmark of national politics as it has been of village society. In the last century only the most skillful manoeuvring among and rapid appraisal of the changes visited on Southeast Asia by the incursions of European powers enabled Thailand to escape colonialism. During this same period, small and independent peasant farmers living throughout the Central Plains were responding to the new opportunities

of an export economy by producing larger and larger surpluses of rice. Within 80 years from 1855 to 1935 village farmers, without coercion or even much encouragement from the government, had increased rice production by twenty-five fold as against a doubling of the nation's population (Ingram, 1971: 37-43). This changed Siam from an economy based largely on subsistence into one of the largest rice exporters in the world.

Nor is there a lack of similar examples in more recent times. The Second World War record of quick accommodation to the Japanese as the war began and rapid reversal to the Allies as it ended, is matched by a similar policy of embracing and expelling the American military as fortunes waxed and waned in Vietnam. Within this same span of 30 years, from the end of World War II to the end of the war in Vietnam, Thai villagers were similarly demonstrating remarkable adaptability to a changing world.

Villagers have quickly taken advantage of the opportunities afforded by modern technology. Within 16 years between Ingram's first publication (1955) of his study on the modernization of the Thai economy and a recently revised edition (1971), peasant farmers had mechanized, modernized, and mobilized to reverse a longstanding trend of rice productivity decline and to significantly expand cultivation into other cash crop areas (1971: 237-239).

The villagers of Baan Tang Chang also provide ample evidence of being remarkably pragmatic and adaptive. With regard to rice farming, once the techniques of modern agriculture became available, they were rapidly taken up by villagers. To cite just one example, within the four short years that it has been possible to double crop rice, 28.3 percent of village farmers have already availed themselves of the opportunity. Though obviously facilitated by government development efforts operating at a broad regional level, in this case the completion of the Greater Chao Phya Irrigation System, it is clear that the high level of response by villagers was the product of their own personal initiative. Tang Chang Villagers have consistently received little encouragement or assistance from government development agencies in adopting new agricultural practices.⁹ For the

9. Government agricultural extension workers have had little practical impact on this community. One villager reported writing several letters to a nearby agricultural experimental station concerning new strains of rice and how he might acquire them. His unanswered letters were typical of government service at this level.

most part the changes which have occurred have resulted from their own pragmatic responsiveness to new opportunities.¹⁰

Changes in demographic behaviour have been similarly characterized by the combination of broad level developments and personal initiative of villagers in gaining access to the fruits of development. As discussed and documented in previous chapters, Tang Chang villagers have rapidly taken advantage of modern medical care alternatives, precipitously reduced fertility by taking up modern contraceptive practice, and quickly adopted new occupations and lifestyles in response to the expanding economic opportunities of Bangkok and upland farming areas. That they have done so largely on their own, and often in spite of the inadequacies of government services meant to facilitate the modernization process, testifies to their remarkably pragmatic and adaptive character.

The development of particular character traits, like everything else, does not come about cost-free. One price that villagers pay for their highly individualistic and pragmatic orientation is that they often experience notable difficulties in the management of interpersonal relations. Though on the surface apparent masters at maintaining harmony and conviviality in everyday social contact, the conflict avoidance mechanisms villagers employ to do so produce a brittleness in social relations. As this underside of village social interaction also has some demographic implications, it is briefly discussed in concluding this section.

When disputes arise between villagers the result is usually that social relations between the individuals concerned are suddenly and summarily terminated. In a real sense there is little else that can be

10. There are, of course, dangers in leaving agricultural development in the hands of villagers. An agricultural extension worker I talked with expressed concern that constant double cropping would ultimately result in declining yields. He said it would be better if some crop rotation with legumes could be introduced, but claimed that village farmers were only interested in growing rice. One village farmer I knew recognized the problem and hoped to correct it by putting in a crop of beans. Typically, this was his own idea.

done. Villager detachment from and indifference to the affairs of others¹¹ means that efforts to mediate conflict between individuals will not usually be undertaken. Neither kinsmen nor recognized authorities in the community, such as village headmen, teachers, or assigned police officers, will take on the role of mediator. Thus because interpersonal conflict cannot be easily resolved, strong pressures exist for its avoidance. When this cannot be accomplished by the veneer of conviviality with which villagers approach social interaction, it is achieved by the individuals involved refusing to speak to each other (mai phuat kan), a situation which may prevail for many years. Avoidance of open confrontation is thus highly prized because, as one informant expressed it, "The teak poles which anchor a house to the ground are difficult to move". In some instances, however, the response to conflict may be both more dramatic and directly demographic.

In certain instances, especially for conflicts arising among household members, the intractability of the situation necessitates that conflicting individuals move away from each other. For example, sibling rivalry or marital discontentment repressed through years of shared residence has been known to erupt in a single, acrimonious quarrel ending with one person leaving to make his or her home elsewhere. Some of the houses isolated across the rice fields of Baan Tang Chang were the aftermath of just such family disputes. In this same regard, Phillips observed in a Central Plains field site community that "20 percent of a sample of 30 families had dissolved six months after the sample had been selected" (1969: 38). Thus motivations to migrate may not solely result from the economic considerations that most migrants readily recalled, but may have been solidly intersected by social-psychological pressures building up within family households or the larger community.

11. There are several well-known attitudes or states related to this posture that are uniquely Thai. Quoting Phillips (1965: 49-50) these may be listed as kreeng caj (the feeling and attitude of self-effacement and humbleness, involving the desire to avoid intruding upon or embarrassing others, or causing others to extend or trouble themselves); chooj-chooj (a state and attitude with multiple forms: simply being quiet or silent, feeling strongly about a situation but expressing nothing, assuming an attitude of indifference, or non-involvement); maj pen raj (literally, 'It does not matter' or 'It is nothing', but a verbal device repeatedly used to shrug off and ignore all the little frustrations and difficulties that occur in daily life).

Though the Buddhist injunction against taking life is quite clear, even to the extent that villagers' reluctance to raise livestock may be attributed to this (see Pfanner and Ingersoll, 1962), a relatively high incidence of murder has been recorded in genealogical census data. Avoidance of open conflict is sometimes achieved only by extensive repression of hostility and anger. In extreme cases individuals, in failing to maintain the ideal composure of having a "cool heart" (cai yen), have burst forth in murderous violence. In addition, the individualism which fosters toleration of deviancy, allows hoodlums (nakhleeng) and outlaws (anthaphan) to exist as a traditional and often revered class. For field study residents these factors have together resulted in 23 reported murders, or 1.5 percent of all deaths reported.¹²

For the most part, however, daily interactions among villagers are notably polite and pleasant. To overcome the difficulties of personal interaction, status differences are frequently used to establish relationships that involve some elements of the patron-client structure: "The superior gives from his greater resources something that will please the inferior, who returns the favour with such services as are at his disposal" (Hanks, 1975: 199). In the following section the religious basis of the patron-client structure and its implications for village demographic behaviour are discussed.

IX.2 Non-Buddhist Religious Traditions and Demographic Behaviour

Thai religion, as the work of Kirsch (1967) and other scholars (e.g. Tambiah, 1970) demonstrates, is a syncretic amalgam of several traditions: Hindu-Brahman, animistic, and naturalistic.¹³ In this chapter,

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12. These figures pertain to all deaths reported, not just those which occurred within Baan Tang Chang. Two out of the 23 reported murders were possibly suicides. Nevertheless, this mortality level compares unfavourably to the 1960 U.S. homicide incidence of 0.5 percent of all reported deaths (United Nations, 1961: 418). General familiarity with Thailand, as well as U.N. figures (United Nations, 1961: 440) showing reported homicide levels in Thailand that are roughly twice those of U.S. levels, indicate that Baan Tang Chang is not atypical.
 13. The syncretism of Thai Buddhism is well demonstrated in the text Traiphum (Three Worlds) which describes an elaborate cosmography derived from Hindu ideas of earth and various heavens and hells. As Vella states, "Buddha has been deified becoming the principal god among the host of Hindu dieties" (1957: 72).

I have thus far attempted to relate various Buddhist beliefs and practices to particular character traits of Central Thai villagers and from there to suggest some possible implications for demographic behaviour in the village community. In this section, I will concentrate on the non-Buddhist components of Thai religion and their relevance for demographic behaviour.

IX.2.1 Hinduinization

During the course of their southerly drift into the Central Plains, the Tai-speaking peoples either brought with them, or absorbed from the people they met along the way, some non-Buddhist socio-religious traditions. In the thirteenth century after defeating the Cambodians and establishing a Thai kingdom centred at Sukhothai just beyond the northernmost edge of the Central Plain, the ruling institution of Thai kingship was reorganized by way of conscious imitation of the Khmer court. In this way what Coedes (1962) has called the "Hinduization" of the Thai kingdom was accomplished.¹⁴

Hinduization imparted to the Thai court and Thai society an emphasis upon status and hierarchy that remains a significant aspect of Thai political and social structure. Brahmanistic duties, rituals, and the organization principles of a Hinduized hierarchy were attached to the monarchy and subsequently spread by the reach of government administration throughout the countryside. For peasant villagers this meant being drawn into a system where they were at the bottom of a tiered feudal hierarchy of patrons and clients (Rabibhadana, 1975). While the structure may be traced to Hindu influences, the rationale is firmly Buddhist: those in higher positions are there because they have more merit (bun) than those in lower positions (Hanks, 1975; Wilson, 1962: 74). Furthermore, the accumulation of merit provides the means for individuals to move up or down the social scale, in either this or successive incarnations. Thus,

14. Unlike the Chinese influence in Southeast Asia which sought to impose a system of concepts and principles by exercising suzerainty over a more or less subjugated people (e.g. the Vietnamese), the Indian influence lent to Southeast Asia beliefs and organizational principles remarkably similar to her own, but capable of operating on a broader scale. They were subsumed voluntarily by mostly indigenous ruling groups and used to overcome the isolation of their people through taxation, corvee, and irrigation system development under the head of divine kingship (Coedes, 1962).

the individualistic component of Thai Buddhism militated against the development of the kind of rigid caste system which remains the legacy of Hinduism's original formulation in India.¹⁵

From the fourteenth century onwards a hierarchical system of feudalistic control over labour was elaborated in Thailand. With the shift of the centre of the kingdom from Sukhothai southward to Ayutthaya, the corvee system was institutionalized by laws requiring all commoners (phrai) to register with a master (nai) to whom they owed a certain fixed amount of work every year. In the fifteenth century the sakdiinaa system of a status ranking was introduced. Though the word sakdiinaa may be translated as "power of fields", in actuality the sakdiinaa rank that one possessed was highly correlated with the number of people beneath one's control (Rabibhadana, 1969: 22). The importance of the control over manpower is further evidenced by the prevalence of slavery in various forms throughout the history of premodern Thailand.

Most Thai historians have been careful to note that in spite of the appearances of formal structure, most superior-inferior relationships were characterized by personal bonds of dyadic patron-client reciprocity (e.g. Rabibhadana, 1975: 110). In consequence, there was some measure of fluidity and flexibility for individuals at the lower end of the power equation to redress unsatisfactory situations — phrai could seek reassignment to another nai or in order to avoid the obligation of corvee labour put themselves into slavery; slaves of some classifications could buy their own freedom or place themselves under the protection of more benevolent owners. Finally, the lack of a national police force always made it possible for phrai or slaves to run off into the forest where they could be free to make their own life. As we have already seen, it was in this latter way that several of the first villagers came to settle the area of Baan Tang Chang.

15. That Buddhism does not bear sole responsibility for this occurrence is attested to by the case of Ceylon "where despite more than two milleniums of Buddhist influence a caste structure and growing rigidity has developed" (Evers, 1964a, cited in Evers, 1969: 121). The difference may likely be attributed to the fact that the caste structure in Sri Lanka predates Buddhist influence by several centuries (Ellawala, 1969: 11) while Buddhist and Hindu influences reached Thailand at more or less the same time.

As many investigators of contemporary Thai social order have noted, patron-client relationships continue to be an important element of Thai social and economic life (e.g. Hanks, 1975; Piker, 1975). Villagers, particularly those, as Piker (1975: 307) has noted, who are without kindred and land will tend to seek association with more wealthy landed villagers. Several instances of dispossessed elders or unattached youths being taken into the homes of better-off villagers were observed in Tang Chang. Similarly, land rental arrangements are often the basis of long-term dyadic relationships between land-renters and land-owners. In years of poor harvests landowners can be counted on to correspondingly lower the rental fees and, if necessary, called upon for loans to help the villager through this difficult time. Even the wage labour contracts between farmers and workers which have replaced the reciprocal cooperation of communal work groups have many elements of the patron-client relationship about them. Some villagers have established ties with more well-off villagers for whom they regularly do farm work. In return they can expect to not only receive wages but also to have some lien on their employer if a time of future need arises. Some researchers see patron-client reciprocity as "not just the mortar but the rods and rivets that hold Thai society together" (Hanks, 1975: 200), an institution that permeates almost all social relations in the society from parent-child (Phillips, 1965: 85) to monk-layman.

In several situations the patron-client structure appeared to intersect contemporary patterns of village demographic behaviour. In the previous chapter, under-utilization of government health services was explained in terms of its failure to satisfy villager expectations for the establishment of personal dyadic bonds between patient and doctor. Villagers preferred those modern medical services which more closely approximated the patron-client form in which medical services were traditionally provided. For similar reasons, villagers may prefer private sector contraceptive distribution channels over services provided by the government. In this section attention is given to aspects of modern mobility patterns which incorporate elements of the patron-client structure.

In discussing patterns of early settlement it was noted that one group of villagers whose descendants survive in the community were sent to Baan Tang Chang by their market town patrons to engage in the merit-making activity of constructing buildings at the local wat (see Chapter V.1).

Though effected in much less formal terms, the movements of many contemporary villagers have similarly been influenced by ties to patrons residing outside the community. Former villagers who have established successful business or farming enterprises in other regions often attract community residents to work as servants, factory employees, or agricultural labourers on a seasonal or permanent basis. Similarly, villagers who have established satisfactory relationships with construction firm or factory managers will provide entrée for other villagers to follow suit. Thus the tendency of village migrants to cluster at specific destination sites is related not only to the formation of migrant chains among villagers, but also to villagers' preference for reliance upon "patron-client relationships in [their] quest for socio-economic self-betterment" (Piker, 1969: 391).

In more general terms, villager behaviour has been dichotomized into separate spheres emanating from distinct religious traditions: "For the most part ... the villager looks first to patron-client relationships for the betterment of his position in this world; for the improvement of his rebirth prospects, he makes merit" (Piker, 1969: 388). Clearly, however, behaviour in the mundane concerns of life is also affected by the individualistic and pragmatic orientation that Thai villagers derive from their Buddhist heritage. In concluding this section attention is turned to another aspect of village religious belief and practice, Thai animism and naturalism, and their impact upon demographic behaviour.

IX.2.2 Animism, Naturalism, and Demographic Behaviour

Along with various animistic and naturalistic beliefs that the Tai-speaking people brought with them during their drift southward, they absorbed additional beliefs from peoples, such as the Mon of the Central Plain, whom they encountered along the way. Though Thai villagers became increasingly influenced by the religious attachments of the ruling court, their indigenous beliefs did not as a result disappear. Rather, traditional beliefs and practices were often accommodated within or continued simply to exist alongside the grander traditions of Buddhism and Hinduism being spread throughout the countryside.

In the contemporary village, animism and naturalism occupy a relatively minor role. Though beliefs in water spirits, tree spirits, mediums, fortune-tellers, amulets, and astrology abound, they have fallen into increasing disuse. The spirit doctor who, in attempting to beat the spirit thought to have possessed a crazed villager, kills his patient in

the process is ridiculed. An old couple who bemoan the offence to the tree spirits by a canal-dredging crew that cuts down the trees lining the village klong is ignored by younger villagers more interested in progress than old beliefs. Obeisance to the rice goddess (mae prasop) is no longer given on the carefully managed and controlled rice paddies put into double-cropping. The rituals of childbirth are quickly dispensed with when delivery difficulties result in a woman being rushed to a nearby hospital.

Clearly naturalistic explanations exist to facilitate acceptance of life's calamities and misfortunes. When a Tang Chang man was struck and killed by lightning he was said to have met his fate (taam duang). Villagers who had had many children often rationalised their behaviour by saying that they had followed nature (taam thammachaat). Because "magic and spirits are invoked largely to maintain the status quo" (Piker, 1969: 388) they are passing into disuse. As villagers take increasing advantage of modern means to exercise effective control over elements in their own universe, their attachment to traditional and less effective means declines.

IX.3 Life Cycle Rituals and Demographic Change

In all societies, various critical life cycle events are marked by rituals centred upon the individuals who are in transition from one phase of life to another. As these "rites de passage"¹⁶ are often concerned with such basic demographic occurrences as birth, death, marriage, or migration, examination of the content of such rituals may reveal what the society understands of its own demographic predicament and what behaviour is sanctioned as a result. For Central Thai villagers important ritual expressions surround the events of childbirth, death, entry into adulthood, and marriage. In this section these rituals are briefly described and mined for what they imply about demographic change.

The rituals associated with childbearing in a Central Plains village community have been most clearly detailed in the work of Hanks (1964). Though the close proximity of Hanks' study site to Bangkok may well mean that her analysis of data she collected in the 1950s may at

16. In Les Rites de Passage Gluckman (1962), recapitulates the position originally set forth by Van Gennep in his pre-World War I contribution to the study of ritual: "movement between groups, or alterations of states ... disturbed both the life of society and the life of the individual, and the function of rites de passage was to reduce the harmful effects of these disturbances" (Gluckman, 1962: 3).

present no longer be valid for that community, for Baan Tang Chang which is further distant and less subjected to the modernizing influence of Bangkok, Hanks' birth ritual ethnography is still a generally accurate description of contemporary practices. In recent years, though, some Tang Chang women have given birth in nearby hospitals or clinics. However, this has been almost totally restricted to emergency situations when childbearing was a life-threatening situation to the mother. To an extent, there has also been some change in the attention devoted to particular rituals associated with maternity. For the most part, however, especially in normal deliveries, Tang Chang women continue to deliver in their own homes, rely upon local midwives, and perform the traditional rituals that signify entrance of a new being into the world and that mark, in the instance of first birth, the transition from girl to woman.

There are three ritual occasions of importance in the aftermath of childbirth: 1) receiving the child, 2) securing the child's spirit, and 3) purifying the mother. Shortly after birth the infant is placed upon a rice-winnowing tray. A brief ceremony is then conducted by the midwife to more closely bind this new spirit to the physical world it has entered and to the future life it will have therein. The midwife, employing the same movements used in winnowing rice, bounces and catches the newborn infant three times on the rice-tray. As Hanks states, "The first objective of winnowing a baby was to seize it (kaan rap khwan) and so 'complete' the child's person" (1964: 67). At the same time the midwife asks who will claim the baby. Either the mother herself or another woman will claim the infant.

On the rice-tray with the infant certain articles are placed. For a boy, usually a pencil and a book so that he "would have good knowledge and a good memory" (Hanks, 1964: 47); for a girl, a needle and sewing thread so that she would be prepared for household tasks such as needlework. These differential attitudes about the roles of males and females exhibited during this first birth ritual are clearly evident in parents' later attitudes about whom among their children should be encouraged and supported for higher education. Nevertheless, as Prachuabmoh, Knodel, and Alers' analysis of data from a nationwide sample survey demonstrates (1974), and as findings from my own field study confirm, there is apparently little sex preference evident among parents. Children of each sex bring their own blessings as well as problems for the parent.

The rituals conducted for the newborn are held in specific recognition of the need to help the infant through this most dangerous period in its life. Rajadhon (1965: 147) reports that as the midwife winnows the child she says: "Three days a spirit child, four days a human child!". The belief that the "child is not fully human for the first three days" (Hanks, 1964: 67) recognizes the inherent dangers of the neonatal period as well as providing a psychological hedge for parents in the event that a neonatal death occurs.

By various means attempts are made to deceive whatever malevolent spirits may be around so that the infant will not be drawn back into the spirit realm by an early death. At the winnowing ceremony an older woman who has herself successfully born and raised many children may claim the infant to improve its chances of survival. Also some observers report that people usually attempt to demonstrate that the child is worthless by saying that it is ugly or attempt to fool the spirits into thinking that it is not a child at all by referring to it as a little animal.

After the newborn has survived this, the most dangerous period of its infancy, another ceremony is usually performed. On the third day after birth the child's parents may, by tying sacred strings around the infant's wrist,¹⁷ attempt to more securely bind its soul (khwan) to its physical form. This ceremony is often conducted in a quiet and non-public manner because the parents may "have not yet lost their fear that the spirits will come and take their child away" (Rajadhon, 1965: 185). In former times, when the infant had survived its first month a more public ceremony at which monks officiated was held to again secure the child's khwan. At this time also the head of the one-month old child was shaved. From that time a top-knot was allowed to grow, until at 9, 11, or 13 years of age it was in another ceremony shaved off. In recent years the custom of wearing top-knots has greatly declined.

17. The khwan ceremony where the wrist of an individual is ritually secured with a sacred string to bind the soul may be used in a variety of other life-threatening occasions. In Tang Chang I observed its use in the instance of an old man's dying illness as a last attempt to bind his spirit to his body. It is also used widely throughout Northeastern Thailand to protect those about to embark on a long journey. No such similar association with mobility occurs in the contemporary Central Plains.

Changes in the demographic circumstances of village life may be reflected in, or causative of, changes in village ritual behaviour. Waning interest in the top-knot custom affords a prime example of this. In the past, wearing the top-knot was universal. At present the top-knot is worn only by those children who were seriously ill or very weak during their early childhood. The clear implication is that in previous times the dangers of death in infancy or early childhood were greater and ever-present so that all children were provided the ritual protection of wearing a top-knot.¹⁸ This is substantiated by quantitative data collected for the field study population which shows a consistent decline in infant and early childhood deaths from past to present (see Chapter VII.1).

Other rituals associated with childbearing have similarly undergone alteration or modification with the changing times. Hanks (1964: 101) mentions that the period a post-delivery woman was expected to ritually "lay before fire" (yu fai)¹⁹ has been shortened from 29 or 31 days to 15 days or less and that different heat-making devices such as small braziers or hot water bottles have been increasingly used as more moderate alternatives to the extreme heat of the traditional fires.²⁰ In Tang Chang the average period of yu fai has apparently also shortened, though several women mentioned that the longer a woman laid by the fire the better it was for her.

The rationale for the yu fai ritual was unanimously expressed as a necessary means for women to recover the strength they would need to once again carry on the arduous work of rice farming. It was widely recognized

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18. In addition to this explanation for waning interest in the top-knot, Attagara (1967) explains that the rite of passage aspect of the top-knot cutting ceremony (i.e., in making children aware of their changing status) has been replaced by school matriculation.
 19. For the best description of this and other birth delivery practices see Hanks' chapter "The Birth of a Child" (1964: 41-57). See also Attagara's chapter "Rites of Passage in Ban Nai" (1967: Ch.9) and Pedersen's article (1968) "Aspects of Woman's Life in Rural Thailand".
 20. So hot are these traditional fires that women must be cautioned from falling into a sound sleep lest they forget to turn to avoid seriously blistering or burning. Some foreign observers have referred to the yu fai ritual as "roasting".

that market town women who did not have such physical demands placed upon their labour could take modern medicines in the post-partum period as a substitute for the yu fa tradition. For a woman who had just given first birth, yu fa was also seen as a ritual which conferred upon her maturity. It transformed her from the rawness (dip) of girlhood to the ripeness (suk) of womanhood. A similar transformation was achieved in males by the customary entry into monkhood (buat phra) for a short period during early adulthood. Adherence to both these rites of passage has not yet significantly declined in Baan Tang Chang.

Deaths of either mothers or infants during childbirth are singled out for special ritual treatment. Maternal deaths²¹ are an especial cause for concern and fear, as it is felt that such deaths are contrary to nature and that the spirits of the deceased (phii) will in consequence be vengeful and malevolent.²² In former times the corpse of such a woman would be buried as soon as possible. The usual funeral rites which culminate in cremation

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21. One curious belief to which Tang Chang residents unanimously adhered was that if a pregnant woman were bitten by a snake she would, because of her pregnancy, be temporarily immune to its venom. However, soon after delivery of the baby the woman would finally succumb to the poison and die.
 22. An indication of how powerful and frightening the corpse of a woman who dies in childbirth may be, was provided by the story a traditional doctor (moo booraan) related to me of how he once attempted to secure a love potion. The "oil of enchantment" (naman sanee) by which a spurned suitor may in vengeance gain the love of a person must be extracted from the buried corpse of a woman who has died at childbirth. The Tang Chang moo claimed that he once with a friend stole into the wat burial grounds in the night to dig up such a corpse. They first uncovered where the head should have been only to find, much to their surprise, the feet. Quickly recovering, they dug at the other end of the burial mound, only to uncover, to their great shock, the feet once again. So great was his friend's fear by this time that the moo had to tie him with a rope to make him stay. Finally, uncovering the entire corpse they located the head, struggling mightily with the body as it went through rigid contortions. At last they were able to extract the oil from just beneath the corpse's putrescent chin. They quickly fled and the moo claimed that he was later able to sell the oil for a substantial sum of money. (As this story is very similar to part of the well-known tale of Khun Chang-Khun Phaen, the Tang Chang moo may have been telling merely a local variation of a traditional story rather than revealing a true personal experience.)

were denied to such unfortunate and feared individuals. At present, however, though such women will be cremated, they will be denied the ceremonies, such as the monks chanting (suat), which are organized when death occurs in normal circumstances. One informant stated that chanting over the corpse of one who died in such a way would cause her ghost to become very aggressive.

The ghosts of infants or young children are also to be feared, principally because they may take their mothers with them. Prescribed rituals for disposing of the corpse, such as calling in a spirit doctor (moo phii) to officiate, placing the body in a pot, and burying the pot at a certain distance or direction from the house, must be followed in order to protect the parents from the child's spirit.

As in maternal deaths, victims of unexpected or sudden deaths from causes, such as gunshot wounds, lightning, or car accidents, are similarly subjected to special treatment because of the potential malevolence of vengeful spirits. In former times they too would be buried rather than cremated. At present, however, they are quickly cremated without the usual three days of ceremonies.

For deaths from what Thais speak of as natural causes, that is deaths preceded by long and recognizable illness, funeral ceremonies are public, community celebrations. The family of the deceased sponsors the three days of celebration (ngan liang) during which food and often alcoholic drink is served. As these funeral celebrations are only held in cases where death was an expected occurrence, the occasion is usually one of festive gaiety rather than mourning.²³ Except for the solemnity injected by the appearance of monks who chant for a brief time during each of the two evenings of wake and preside over the rituals attendant to the actual cremation on the third day, funerals are a source of enjoyment for most

23. In general, to the Western observer, Thai expression of feelings concerning death seems quite different than those he finds in his own society. Though sorrow and grief are sometimes expressed, this is minimal. It is rather unseemly for individuals to openly express extreme emotions. In one instance I observed an individual rather gaily and animatedly discussing the circumstances surrounding the death of an individual whose funeral he had recently attended. Only later did I discover that he was talking of the death of his father who had been killed in a car accident only three days earlier.

villagers.²⁴ Gambling, though disapproved of by the local abbot, is legally and traditionally sanctioned at funerals. For the better entertainment of villagers, the sponsor (chao phap) may hire a local company to show a movie or perform a traditional play (likee) during the wake.

Most wakes are held at the home of the deceased, which is decorated with bright wall-cloths and strung with electric lights for the occasion. The corpse is placed in a coffin that is raised several feet above floor level. Several articles, such as a half-shell of coconut filled with oil and a lighted wick, incense sticks, and unhusked rice, are placed in front of a photograph of the deceased. Except during the monks' chanting, when a sacred string is passed through the hands of monks and laity and connected to the coffin thereby linking the living with the dead, little attention is given to the deceased. On the third day, after two all-night celebrations, the body is moved to the wat for cremation. If the deceased has not died in his own home, however, the entire three-day celebration must be held at the wat. Informants report that the relatively greater number of funerals held at the wat in present as compared to past times is attributable to the greater numbers of villagers dying in hospitals in the present.

Marriage ceremonies are held jointly at the respective houses of the bride and groom. Though some ethnographers have said that marriage ceremonies were either non-existent or unimportant (e.g. Wijewardene, 1967) in Thailand, for the people of Baan Tang Chang this was not at all the situation. Though recognized alternatives to a formal marriage ceremony exist in the form of elopement or simply de facto co-residence, for most villagers first marriage was marked by a three-day marriage celebration, involving the preparation and consumption of a great amount of special foods, processions and gift exchanges between the two celebrant households, and finally a formal ritual in which relatives and other

24. Within rituals and ritual practices we may find reflections of the broader social structure within which the society operates. For example, the prevalence of cremation in Thai society as contrasted with humation as practised by the Vietnamese or Chinese may, as Smith (1972) has noted, reflect the lesser importance of kinship and ancestor worship in Thai as compared with Vietnamese or Chinese society.

community members recognize and bless the union by pouring water over the joined hands of the bride and groom. Monks are invited to the bride's household to chant over the couple and a sacred string is tied between the bride and groom to symbolize their union.²⁵

There are similarities among the various life stage rituals by which villagers mark transitions from one phase of life to another. In all the ceremonies the same symbols are evident — half-coconut shells, unhusked rice, water, incense, and above all the sacred string. The message is one of continuity through various changes. People are born, they live, they die; all is the same. The sacred thread is the main constant in all life passage ceremonies. Just as the umbilical cord is the thread of life from mother to child, so is the sacred thread the connection to the world beyond; as this life is suffering commencing with the cutting of the cord, so do villagers attempt to alleviate suffering by tying khwan (souls) with the sacred thread; as the severed umbilical cord separates mother from child, so may the sacred thread, which symbolizes villagers' relationships to each other, the union of marriage partners, the ties between relatives, the bond of community in witnessing each other's passage through life's various phases, be cut and the bonds dissolved.

Along with the individualism, pragmatism, and patron-client structures through which they have achieved rapid demographic change, "the fundamental uncertainty with which [villagers] approach this sphere of existence" (Piker, 1969: 389) remains an integral part of their approach to life. Given the growing complexity of the modern world, the combination does not badly fit the requirements for survival. For Thai villagers the uncertainties presented by modern life are nothing new, the opportunities of modern development nothing to be eschewed.

25. Many villagers claimed that the age of marriage has declined in recent times. While this is not borne out for marriages occurring within the community, it may be true of the marriages of young migrants occurring outside the community. At any rate, villagers' great concern in this regard was over what they perceived to be a loosening of sexual standards. With the high expectation that a female should be a virgin at marriage, it was preferable, villagers said, that she marry young rather than be "spoiled" (sia) prior to marriage.

CHAPTER X

SUMMARY AND CONCLUSIONS

Two men in a hot air balloon get lost in a cloud bank. After a long time they finally emerge again into clear air. Finding the terrain unfamiliar, they call down to a man who happens at that moment to be walking on the ground below.

"Where are we?" they ask.

"In a hot air balloon", comes back the reply.

Anonymous.

Demographic research in the developing world has been concerned almost exclusively with studying national or regional population aggregates. As a result demographers have with some accuracy monitored the pace of demographic change in developing regions and illuminated where particular or potential population problems exist. However, satisfactory recommendations as to how such problems may be ameliorated or overcome have not been readily forthcoming. Emphasis upon economic development as the motive force behind demographic change has often resulted in some variation of the conclusion that what developing nations need to solve their population problems is more development. While the prognosis is undoubtedly accurate, it is not very useful.

An interesting study conducted by Ratcliffe (1976) points to the dangers involved when population research is devoid of contextual contact. The hypothesis that "the less familiar the analyst is with the culture of data origin, the less likely it is that culture-specific meaning will be ascribed to observed empirical relationships" (1976: 322) was tested by submitting the same KAP data set to a diverse set of analysts with varying degrees of familiarity to Bangladesh where the data was collected. The results confirmed the hypothesis: while Western analysts with no experience in the area offered the greatest number of data interpretations they tended "to focus more heavily upon more neutral and context-free interpretations ... In contrast, the Bengalis — and particularly the field workers who [had originally collected the data and had the least academic training of all the analysts] — focused more heavily upon more context-dependent

explanations ... and tended to offer additional underlying explanations" (1976: 327). At the practical level, Ratcliffe (1976: 327) points out that the policy implications for program development would be different dependent upon which set of analytical conclusions, those of the foreign researchers or those of the Bengali field assistants, are used.

At a broader level, Caldwell has raised serious questions about the extent to which Western ethnocentrism affects demographic research in developing nations by "predetermin[ing] the range of findings and ask[ing] questions that provide answers almost by echo effect" (1976: 336). To avoid such difficulties in my own research, extensive effort was devoted to the use of qualitative data collection procedures. Participant-observation, case studies, and informant interviews provided relatively unobtrusive means to collect information that was context-dependent. In the more formal procedures necessary for collecting quantitative data, greater emphasis was placed upon retrospective elicitation of actual events than upon prospective elicitation of attitudes or opinions. In addition, considerable attention was given to developing techniques and training interviewers to elicit data in relatively unstructured interviews that more closely approximated everyday conversation than the question-answer formats usually employed in survey research.

In this dissertation the methodological considerations and substantive conclusions that have resulted from applying such alternative and additional procedures for conducting demographic research have been presented. By concentrating study upon a single community in rural Thailand, a variety of research instruments and techniques not normally used by demographers were employed within a cohesive research design. In general the findings indicate that demographic emphasis upon modern economic development is well-placed. However, the level of investigation and the methods of inquiry resulted in a number of findings that would not likely have emerged had the study been undertaken at a different level. For example, it was possible to link value of children perceptions with particular modernization inputs that have directly affected the lives of villagers. Alternatively, in several instances demographic change could be seen to emanate as much from a priori historical or cultural conditions as from the influence of modern development. For example, continuing male dominance in mobility has been traced to corvee, military, and monkhood service which promoted a tradition of male mobility. In sum, the effect

that modern development has upon a particular population is greatly influenced by the unique cultural parameters and historical experiences which members of that population share.

In concluding this dissertation the research instruments employed and the major findings which have emerged are reviewed. The research techniques used within field study are evaluated in terms both of their usefulness for research undertakings of a similar kind and of their possible application to studies approached at different levels. Similarly, substantive conclusions from the study are re-examined in terms of their implications for demographic studies both within Thailand and other areas of the developing world. Thus while the findings from this study of a single village community cannot be directly extrapolated to areas beyond the field site community, the methodological and substantive insights derived are relevant to general research concerns of demographers in Thailand and elsewhere.

X.1 Community Demographic Study: A Review of Methods

The sine qua non of community demographic study is the field study approach developed and most often used by anthropologists. Extended location within the field site community, participation in the day-to-day affairs of community life, and the establishment of rapport and relationships with the people who are the study subjects provided a basis for utilizing an eclectic mix of research tools in accordance with specific research objectives.

Community demographic study relies heavily upon qualitative insights derived during the course of field work. Living in the study community for one year provided not only a contextual richness that facilitated the interpretation of quantitative data, but also unique opportunities for investigating particular aspects of demographic behaviour and for testing specific tools for collecting various types of data. Case studies, conducted retrospectively and prospectively, provided in-depth illumination of particular patterns of and predispositions for demographic behaviour. Community informants provided direct and valuable information on how villagers perceive their own demographic situation and on various factors that they would themselves consider in making demographic decisions. In addition, informants were constantly used to re-check or expand upon information uncovered during the conduct of surveys. Development and

testing of particular survey instruments also benefited considerably from the input of informants. Information about whether and how particular questions could be asked in survey form was elicited directly from key village informants. Extended residence in the study community also ameliorated initial attitudes of suspicion or deference that could otherwise be problematic in survey research efforts.

It is likely that demographic research conducted at any level may benefit from efforts to gain direct experience of the everyday conditions faced by the people who are the subject of study. Even short-term field site visits provide some basis for directing and interpreting more strictly quantitative studies. Thorough examination of available ethnographic literature as well as familiarity with the language and customs in the area of study are similarly important adjuncts to developing a vivid sense of place within which more satisfactory studies may be developed and undertaken. In the remainder of this section the two major surveys conducted during the course of field study are reviewed and evaluated.

After several months of testing the feasibility of using a genealogical approach to gather information about community demographic history, a genealogical census was conducted. Because restricting data collection to the lineages of contemporary survivors would have biased the resultant data set, available written records, maps, physical evidence of previous household sites, and villager reports upon former neighbours were all incorporated into a comprehensive effort to recover as many of the previous community residents as possible.

On a qualitative level the genealogical approach was eminently successful. As family trees were pursued through the distant past, respondents were often stimulated to recall anecdotes or family legends about particular ancestors. In combination these fragmented remembrances yielded substantial insights into the distant demographic past. The narrative of community population history presented in Chapter V was largely the result of piecing together the many stories which emerged during genealogical interviews.

On a quantitative level the genealogical approach was a more limited success. Substantial omission of individuals who did not survive long enough in the community to be remembered, or who did not leave

survivors or other traces in the community from which to be recovered, meant that the genealogical survey fell short of its objective of recovering all individuals who had ever lived in the community. The unrealistic rates computed from genealogical data prior to fifty years ago attest to this failure. Nevertheless, the data recovery for more recent decades was sufficiently complete to yield reliable indications of the quantitative dimensions of some patterns of recent demographic change in the community. For example, the age-sex patterns of mortality decline since World War II illuminate the rapidity with which basic and evidently long-standing demographic conditions in the community changed once the effects of modern technological and health system development began to be felt.

Obviously a genealogical approach can only be attempted within relatively small populations. The nearly 5,000 individuals recovered for Baan Tang Chang required a painstaking and time-consuming effort. Nevertheless, as the benefits derived from interest in the demographic histories of European parish communities attest, similar efforts in the developing world may yield quite unexpected and substantial rewards. However, there is a need to develop analytical procedures, such as micro-level analysis of patterns of individual demographic behaviour within a particular family context, that may more fully exploit features particular to the data set and avoid the weaknesses of data omission that are likely to be problematic.

One important lesson from my effort is that available written records and other evidence may be used to overcome the inherent bias of a strictly genealogical approach. Similarly, as substantial demographic change is evinced to have occurred just within the post-World War II period, the approach could be usefully applied to gathering data over a limited duration. Especially in the Thai context, where genealogical recall is relatively shallow and written records prior to World War II extremely scarce, may such a limited undertaking be indicated.

While the genealogical approach is necessarily limited to studies of small cohesive populations, the life history survey may possibly be applied in studies undertaken over larger areas. The field study context provided an ideal opportunity for gaining experience and familiarity with the use of the matrix format. A distinct advantage of the technique was that interviews could be relatively unstructured within the context of

highly structured data recording and coding procedures. While interviewers directed inquiry towards particular aspects of respondents' behaviour, the interviews were typically more like free narrative flows of information than question-answer sessions. With careful preparation, training, and supervision the life history matrix survey may be usefully applied to research efforts undertaken at a broader scale.

Life history data was collected over a range of variables including fertility, mobility, land ownership, and medical care experiences of villagers. All life history events were linked with age of occurrence and thus, when related to date of birth, age-specific cohort and period measures were computed from the data set. In some instances life history rates (e.g. infant mortality, age-specific fertility) provided means to test the reliability and completeness of genealogical survey data; in others, life history measures (e.g. marital fertility, contraceptive use, and seasonal mobility rates) were presented to illuminate particular patterns of demographic behaviour in the community. In addition to such longitudinal uses, life history data was analyzed cross-sectionally. Particular life history occurrences (e.g. contraceptive use) were compared with other occurrences (e.g. seasonal mobility, changes in land-ownership status) to reveal relationships between different aspects of behaviour occurring within an individual's life.

Considerable conceptual and analytical problems remain to be solved in the use of life history matrix data. However, some preliminary indication of the potential usefulness of such a comprehensive data set was provided in Chapter VIII. By focusing upon three separate areas of demographic behaviour — medical treatment decisions, contraceptive use patterns, and seasonal migration occurrences — it was possible to explore several dimensions of recent demographic change within the same data set. In the remainder of this chapter major substantive findings of this and other chapters are reviewed.

X.2 Review of Major Findings from Community Demographic Study

The variety of data collection techniques employed during field work in a village setting resulted in data of a broader and deeper range than usually available for demographic research. In consequence, it was possible to approach analysis from several perspectives. Qualitative and quantitative data from the genealogical census were examined to provide

an overview of community demographic history (Chapters V and VI). Commensurate with the greater reliability of quantitative data from more recent decades, the period of rapid demographic change experienced since World War II was subsequently analyzed in greater detail (Chapter VII). In the process national and regional developments which facilitated and produced demographic change in the study community were examined. Given the depth of information available from life history data, additional attention was given to the role villagers played in effecting demographic change in their own lives. This inquiry focused upon recent changes in village behaviour in the areas of medical treatment, contraceptive use, and circular mobility (Chapter VIII). The contextual richness that resulted from the field study approach was explored to examine some cultural parameters of village life that provided underlying explanations of recent patterns of demographic change. This analysis focused upon the religious and ritual content of village life (Chapter IX). In this section the major findings that emerged from this variegated approach to demographic research are briefly summarized and reviewed in a broader context.

The origins of Baan Tang Chang are firmly rooted in traditional Thai mobility patterns of hiving-off from settled, established areas to settle in hinterland frontier areas. The pattern was intersected by the desires of many early migrants to escape the obligations of slavery or corvee labour by which they were bound in riverine communities some 30 kilometres east of the community. These findings are compatible with the picture that historians have presented of population dynamics in the area. Low population density was manifested by the greater emphasis that was placed upon controlling manpower rather than land.

The influx of Chinese settlers in Baan Tang Chang occurred as a spill-off from the flood tide of overseas Chinese immigration to Thailand at the turn of the century. While the importance of the Chinese at a national and regional level, first as labourers and then in commerce, has been well-documented (e.g. Skinner, 1957), field study evidence indicates that Chinese immigrants also had a direct and lasting impact upon village life. For example, the patterns of wage labour which they introduced sounded the death knell of communal, cooperative labour patterns in the village community.

Quantitative analysis of community demographic patterns undertaken for more recent periods of village history documented that tremendous changes have occurred since the end of World War II. Public health, transportation, and irrigation system improvements, though first initiated in the early decades of the century, did not significantly affect the study community until after World War II. With the broad-level improvements made in recent decades, village mortality rates have declined precipitously. Genealogical data evince that life expectancy at birth increased by at least ten years during the post-War period. The most dramatic improvements have occurred in levels of infant and female reproductive age mortality. Life history data show that infant mortality rates have declined from a peak level of 221 deaths per 1000 births in the period 1937-1946 to 127 for the most recent ten year period. Analysis of genealogical data showed that while both male and female adult age mortality rates have declined, the decline has been most sharp for females. Differences between this pattern of mortality decline and that shown in Model Life Tables (see Chapter VII.1) points to the need for additional efforts to study the demographic past of developing nation populations.

While life expectancies have increased there is obvious room for further improvements still. In particular, the government health care delivery system does not adequately serve villager expectations and needs. In cases of life-threatening illness or accident, it was shown that villagers rely heavily on non-government services. While generally more expensive than government services, villagers appear to prefer private sector services. The latter are more compatible with personal, dyadic relationships between patient and doctor that characterized the traditional forms of village medical treatment. This explanation relates a widely observed pattern of Thai behaviour, under-utilization of government health facilities, to a traditional feature of Thai social interaction, reliance upon patron-client structures. It thus provides a useful demonstration of the results that may be achieved when observed patterns of demographic and demographically-related behaviour are explained in terms of the cultural context in which people actually live. Broader level studies of the family planning distribution system or the flow of migrants to particular destinations and occupations could also benefit from giving greater attention to such basic social features as the patron-client orientations of Thai villagers.

The precipitous decline in mortality has implications for recent fertility changes experienced in the study community. Nag (1975) has pointed out the inappropriateness of a demographic transition model that describes traditional fertility levels in non-Western regions as extremely high. Genealogical data show that a consistently high age of mother at first birth, averaging over 24 years of age for a century of village history, characterized study community fertility. Though caution must be exercised because of data unreliability for earlier periods, the upsurge in village fertility levels indicated by Baan Tang Chang data for the post-War period is probably the result of recent health condition improvements. Thus the extremely high fertility levels observed in Thailand during the late 1950s and 1960s could have been a departure from traditional levels. Further study is needed to determine whether late age at first birth was a traditional feature of Thai childbearing practices.

For the most recent decade, field study produced considerable evidence that a new regime of fertility behaviour is developing in the study community. This is consistent with national level indications that a "reproductive revolution" is underway in Thailand. The comprehensive approach facilitated by field study provided a longitudinal dimension that illuminated several factors responsible for this change. Mortality decline has brought about greater pressure on village land resources. In consequence, villagers express concern about their inability to provide children with a sufficient inheritance. In addition, the economic value and utility of children in former times has been undercut by several factors: universal education, mechanization of agriculture, and rising costs of medical care. Also the increasing mobility of especially younger villagers has increased parental uncertainty about whether offspring will honour their reciprocal obligation to care for parents in their old age. The combined result has been a rapid increase in the use of modern contraceptive techniques. Over one-third of eligible village women have used some method of modern birth control. Field study indications that family planning decisions are largely the preserve of women, a feature consistent with the fact that women usually control family economic resources, should be investigated within regional and national data sets.

Contraceptive use has been particularly high among younger and poorer villagers — promising findings somewhat at odds with conventional wisdom about fertility change in Thailand and elsewhere. For example,

Knodel and Prachuabmoh (1973: 81) have stated that the "extent of socio-economic differences within rural society may not be sufficient to be associated with extensive differences in reproductive behaviour and attitudes". That the poorest villagers in the study community not only do not want many children but are attempting to do something about it is an important finding that should be studied in a broader national context. Questions about land ownership in rural settings could easily be included in future sample surveys. Analysis of fertility behaviour in these terms could significantly contribute to understanding contemporary fertility change in Thailand.

Transportation and economic developments have been accompanied by tremendous increases in villager mobility. The most dramatic increases have been shown for levels of permanent out-migration and temporary seasonal wage labour migration. Long-term consistencies of migrant age and sex-selectivity were revealed by the longitudinal dimensions of the data. Again, villagers at the lowest end of the economic spectrum exhibited the highest mobility levels. Collecting retrospective data at places of origin provides a means to substantiate the extent to which these features are generally characteristic of Thai mobility behaviour. In addition, field study indications that permanent moves are often preceded by temporary moves could be tested within such data sets.

The picture which emerges from this comprehensive analysis of demographic occurrence and behaviour in a single community is that Thai villagers have been adaptive and responsive to the many changes brought about by modernization. In an effort to uncover some of the underlying causes responsible, the rapidity of recent demographic change was examined in terms of the Thai religious belief system. Further investigation should be conducted into other cultural features of Thai society that may similarly illuminate predispositions relevant to demographic behaviour. For example, the relative unimportance of the extended family in Thai village society contrasts with other societies, and perhaps provides a basis for explaining cross-cultural demographic differentials.

In the village view, being Buddhist and being Thai are synonymous. In Chapter IX the individualism and pragmatism which are generally characteristic of villagers' behaviour were traced to Buddhist philosophical origins. In consequence, the remarkable adaptability of villagers to changes concurrent with modern life was seen not as an aberration, but as a mode of

behaviour uniquely rooted in village cultural traditions. Though the form which modern demographic change takes may be influenced by other features of religious origin, such as the patron-client structures imparted by Hinduization, the ability to adapt rapidly to the exigencies of modern life is consistent with Buddhist orientation. In this regard, continuity with the past should allow Tang Chang villagers to continue to change with the future.

In conclusion, several of the methods employed in this study and some of the findings which have emerged may usefully contribute to future demographic research efforts. However, it should be noted that field study — extended location in and study of a small cohesive community — has itself proven a valuable approach for conducting demographic research. Field study provided not only the opportunity for exploring alternative and additional research methods, but also the means to gain direct knowledge of the "world known in common and taken for granted" (Schutz, 1967: 37) by Thai villagers. Hopefully, this dissertation attests to the benefits that are derived when demographic research considers knowledge of who is being studied as important as what is being studied.

APPENDIX A

SOME TECHNICAL NOTES ON GENEALOGICAL CENSUSING

Genealogies provide a data base for investigating the pace and extent of demographic change in small communities. Genealogical censusing seems a particularly appropriate means to recover data for reconstructing the demographic past for communities in developing nations when written records do not exist or are of poor quality. Because the interviewing, coding, and computing procedures I used may be applicable elsewhere, they are briefly reviewed here.

A genealogical census card was developed to record vital demographic and related information for each individual recovered in the course of the genealogical census (see Figure III.1). Dates were recorded for each of four demographic events: birth, in-migration, out-migration, and death. All dates were recorded with the last three digits of the reported year - it was unnecessary to record the thousandth place digit. A code (999) was designated for events too far removed in temporal, social or spatial distance to be accurately recalled by respondents. Similarly, events which had never or not yet occurred had a special code (000).

A two-digit code was developed for recording the place of occurrence of each of the four demographic events. The code incorporates all seven community field site villages and all places beyond into a system of concentric bands expanding outward from the study community. Thus the place codes may be readily summarized in general measures of distance from the field site community or alternatively used to provide specific locational detail. For occupation and cause of death information a similar two-digit code was developed. This provided the alternatives of either collapsing information into general categories or using the specific detail of the data. In all cases the codes were based on indigenously meaningful concepts of place, occupation, and cause of death.

Prior to beginning the actual survey the entire community was mapped. Several successful attempts have recently been made using aerial photographs in the conduct of demographic and household composition studies (see Hackenberg, 1967; Collier, forthcoming). In particular, Lefferts (1974) was able to productively use aerial maps to facilitate his recon-

struction of household site locations and land ownership patterns in a Northeastern Thai village. Unfortunately, I was unsuccessful in my efforts to gain access to aerial maps for the area I studied. Thus we had instead to rely upon informants' reports, physical evidence that still existed on the ground (e.g., a spirit house standing in isolated disrepair as testament to the house for which it once provided protection; an empty lot still afforded protection from the wind by a neat circumscription of trees), and information from various written sources (e.g., Malaria Eradication Team maps drawn in the late 1950s; household registration forms for houses no longer standing). We drew village maps by combining these bits of information with observation of the present location of community homesteads.

House numbers that had previously been assigned by the government were used to designate households on the maps. The government household numbering system uses three digits, with the last digit occupying the first decimal position (i.e., 10/1, 10/2). Though not all the houses of related individuals will share the first two digits, all houses sharing the first two digits will usually be somehow related. This is a consequence of traditional residence patterns in which typically daughters, but also at times sons, would bring spouses to live for a period of a few years in the parents' house. During this time the young couple would attempt to accumulate sufficient resources to build their own house. Often this resulted in family compounds of several houses.

On our maps, households which had not yet been registered and thus had not been assigned a house number, and there were several of these, were assigned a number sequentially compatible with that of nearby relatives (i.e., 10/5, 10/6). Similarly, houses which were no longer standing were provided house numbers in sequence with those occupied by relatives still living in the community (i.e., 10/8, 10/9). When a genealogical census card was filled in, house numbers corresponding to those on the maps were recorded to indicate an individual's place of birth, residence, and death if these events had transpired in the field site community. Thus the potential for analyzing household composition and residence patterns over time was preserved.

In conducting the actual survey, research assistants were divided into four teams of two persons each, one male and one female. Each team carried with them a complete set of maps which were used during the course

of the interview to record household numbers correctly. Responsibility in conducting the interview was shared by the team members. While one filled in a census card for each individual recovered, the other extended the lines of the family tree to record the proper genealogical relationship. The family tree proved a useful heuristic device to keep interviewers abreast of what they had already covered and what they still had to do. Some of the villagers themselves were surprisingly adept at pointing to positions on the family tree to indicate an individual's particular kin relationship.

As an interview progressed each completed census card was laid out to correspond with its location on the family tree. Fortunately, village households being largely without furniture, villagers do their living and talking on the raised wooden platforms which provide the floors for their houses. This allowed ample space for the sometimes extensive area needed to lay out record cards and draw family trees.

With the completion of each family's genealogical history the interview team would check all information on the census cards with that on the family tree (i.e., name, sex, residence, age relative to other family members, living or dead). The verified data would then be coded into the appropriate boxes on the census card. If necessary a revised version of the family tree would also be drawn at this time. The cards would then be wrapped together with the family tree and submitted to the field editor who would review and recheck all the data. Discrepancies and errors would, if possible, be corrected. If necessary, the package would be returned to the survey team for re-interviewing.

At the conclusion of the genealogical census the entire data set was again re-checked for consistency. Also at this time family relationships recorded originally on the family tree charts were translated into unique identification numbers for each family member. The procedure for doing so was adopted from Hackenberg (1967).

Hackenberg used the concept of "stem family" to code patrilineal linkages between succeeding generations. In Central Thai communities the tendency towards matrilocality makes matrilineal reckoning a more appropriate linkage. From the family trees, 344 matrilineal families up to six generations deep were identified. Each distinct stem family was assigned a unique three-digit code. All individuals within the same matrilineal stem family

were assigned identification numbers that began with the unique three-digit code of their particular stem family. This stem family code of three digits was incremented by two digits for each successive generation. The two-digit increment was established by the birth order of the particular individual. Matrilineal linkages were maintained because the identification number of each individual incorporates, in addition to his own birth order and matrilineal stem family number, the unique identification numbers of his mother, grandmother, greatgrandmother, etc. An example is presented to illustrate the point: An individual assigned the identification number 012 02 03 01 is a third generation member of the matrilineal stem family designated as '012'. He is the first-born child ('01') of the woman coded as 012 02 03. This woman, his mother, was in turn the third-born child of a woman, his grandmother, coded as 012 02.

An unrelated male moving into the community was assigned an identification number from a separate series set aside for this purpose. Any offspring he may have had were designated with identification numbers derived from the matriliney into which he married. The identification numbers of husbands and wives were cross-coded on each other's records. Thus, all individuals in the data set can be linked with other family members and analyzed in terms of the characteristics of their relatives. Also certain computer programming tasks, such as the computation of age-specific fertility rates, were facilitated by these built-in linkages between mothers and children.

APPENDIX B

CALCULATING DEMOGRAPHIC RATES FROM GENEALOGICAL DATA

All rates in this dissertation, as distinct from proportions and ratios have, unless otherwise stated, been computed on the basis of person-years lived within a given time period. The usual procedure in demographic computations of taking mid-period population estimates as the denominator for calculating various rates is more precisely approached within the genealogical data set. Each year of genealogical reconstruction may be viewed as a distinct census count of the study community population. The computer program¹ reproduced in Figure B.1 counts people present in the population at the beginning of each year and tabulates the demographic events which occurred to population members during the one-year period. While the population count by age and sex may be used for such point in time measures as the population age distribution or sex ratio, the computation of rates necessitates a further refinement.

All demographic rates are computed in accordance with the following mathematical expression:

$$\text{Rate} = \frac{\text{Events}}{\text{Time of Exposure to event}}$$

Within specified temporal, spatial, and demographic restrictions, rates are calculated on the basis of the number of events per the amount of time populations are at risk to the possibility of that event's occurrence. While events are easily enough counted, the cumulative exposure must be more precisely measured in terms of person-years lived during the period.

A heuristic device for demonstrating the procedure employed to calculate person-years lived for each one-year period in the genealogical population is provided by the Lexis diagram below (Figure B.2). The diagram schematically depicts the aging of a population of exact age zero to five over a seven-year period from 1966 to 1972. For simplicity, the calculation of person-years is first discussed for a population closed to migration or

1. The program was written by Dr. M. Levin of the East West Population Institute in collaboration with me.

Figure B.1 Program to Compute Demographic Rates from Genealogical Census Data

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FORTRAN IV G1 RELEASE 2.0          MAIN          DATE = 7823:          08/22/76          PAGE 0001
0001      INTEGRR2 M(100,0),MYEAR(87,12)          00010010
0002      INTEGRR2 SEX,DD,CD,AGE,MAT(20,14),DCC          00010020
0003      DIMENSION A(20,14),AK(5),DB(10),PYEAR(87,2)          00010030
0004      KINT = 73075          00010040
0005      I0 = 1          00010050
0006      NNN = 20          00010060
0007      BB(10) = 0.          00100070
0008      910 ACAD(1,1),FMO=920)(V(10,J),J=1,3),M(18,7),M(10,J),J=4,6),M(10,8)          00010080
0009      ID = 15 + 1          00010090
0010      GO TO 100          00010100
0011      920 ISX = 10 - 1          00010110
0012      JD 1010 IYEAR = 308,619          00010120
0013      DD 3 J=1,20          00010130
0014      DD 3 J=1,10          00010140
0015      MAT(1,J) = 0          00010150
0016      3 A(1,J) = 0.0          00010160
0017      DD 6 K = 1,87          00010170
0018      DD 6 M = 1,12          00010180
0019      6 MYEAR(K,1) = 0          00010190
0020      DD 6 K = 1,87          00010195
0021      DD 6 L = 1,2          00010200
0022      PYEAR(K,1) = 0          00010210
0023      5 CONTINUE          00010211
0024      DC 424 IM = 1,18          00010220
0025      FB(18) = 0          00010230
0026      424 CONTINUE          00010240
0027      1 PONMAT(A0K,11,1J,9A,13,12,5X,21J,12,9A,13)          00010250
0028      DD 10 I = 1,18K          00010260
0029      SEX = M(1,1)          00010270
0030      DD = M(1,2)          00010280
0031      MIG=M(1,3)          00010290
0032      DD = M(1,4)          00010300
0033      CD = M(1,5)          00010310
0034      CC = M(1,6)          00010320
0035      OCC=M(1,7)          00010330
0036      MAGBT = M(1,8)          00010340
          C CHECK FOR UNKNOWN INFORMATION          00010350
          C          00010360
0037      AGE = (IYEAR - ED) + 1          00010370
0038      9 IF (DD.EQ.999.OR.MIG.EQ.999) GO TO 10          00010380
0039      IF (MIG.EQ.999.OR.DD.EQ.999) GO TO 10          00010390
          C          00010400
          C CHECK FOR UNBORN          00010410
0040      IF (SEX.GT.2) GO TO 10          00010420
          C ESTABLISH IF PRESENT FOR YEAR CONSIDERED          00010430
0041      IF (DD.GT.IYEAR) GO TO 10          00010440
0042      IF (DD.GT.0.AND.DD.LT.IYEAR) GO TO 10          00010450
0043      IF (DCC.GT.0.AND.DCC.LT.80) GO TO 507          00010460
0044      IF (MIG.GT.0.AND.MIG.LT.IYEAR) GO TO 10          00010470
0045      507 IF (MIG.LT.IYEAR) GO TO 10          00010480
0046      IF (AGE.LE.0) GO TO 10          00010490
0047      IF (AGE.GT.86) AGE = 87          00010500
0048      IF (MIG.EQ.IYEAR) GO TO 800          00010510
0049      MYEAR(AGE,SEX) = MYEAR(AGE,SEX) + 1          00010520
0050      800 CONTINUE          00010530
0051      JC = SEX + 10          00010540
          C CHECK FOR BIRTHS          00010550
0052      IF (DD.NE.IYEAR) GO TO 20          00010550

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FORTRAN IV G1 RELEASE 2.0          MAIN          DATE = 7823:          08/22/76          PAGE 0002
0053      IF (DD.EQ.MIG) GO TO 20          00010560
0054      IC = SEX + 2          00010570
0055      III = MAGBT          00010580
0056      IF (MAGBT.EQ.0) MAGBT = NNN          00010590
0057      IF (III.EQ.0.AND.NNN.EQ.35) NNN = 15          00010600
0058      IF (III.EQ.0) NNN = NNN + 5          00010610
0059      MYEAR(MAGBT + 1,IC) = MYEAR(MAGBT+1,IC) + 1          00010620
0060      MYEAR(AGE,JC) = MYEAR(AGE,JC) + 1          00010630
          C CHECK FOR IMMIGRATION          00010640
0061      70 IF (MIG.NE.IYEAR) GO TO 30          00010650
0062      IC = SEX + 6          00010660
0063      MYEAR(AGE,IC) = MYEAR(AGE,IC) + 1          00010670
0064      MYEAR(AGE,JC) = MYEAR(AGE,JC) + 1          00010680
          C CHECK FOR DEATHS          00010690
0065      30 IF (DD.NE.IYEAR) GO TO 40          00010700
0066      IF (DD.EQ.MIG) GO TO 40          00010710
0067      IC = SEX + 4          00010720
0068      MYEAR(AGE,IC) = MYEAR(AGE,IC) + 1          00010730
0069      MYEAR(AGE,JC) = MYEAR(AGE,JC) - 1          00010740
          C CHECK FOR OUT-MIGRANTS          00010750
0070      40 IF (MIG.NE.IYEAR) GO TO 10          00010760
0071      IF (DCC.GT.89.AND.DCC.LT.80) GO TO 10          00010770
0072      IC = SEX + 8          00010780
0073      MYEAR(AGE,IC) = MYEAR(AGE,IC) + 1          00010790
0074      MYEAR(AGE,JC) = MYEAR(AGE,JC) - 1          00010800
0075      10 CONTINUE          00010810
          C          00010820
          C COUNTING PERSON YEARS BY SINGLE YEARS          00010830
0076      DO 374 ISEX = 1,2          00010840
0077      PYEAR(1,ISEX) = (MYEAR(1,ISEX)/2.0) - (MYEAR(1,(ISEX+1))/4.0)          00010850
          + (MYEAR(1,(ISEX+6))/2.0) - (MYEAR(1,(ISEX+8))/4.0)          00010860
          + (MYEAR(2,ISEX)/2.0) - (MYEAR(2,(ISEX+1))/2.0)          00010870
          + (MYEAR(2,(ISEX+6))/2.0) - (MYEAR(2,(ISEX+8))/2.0)          00010880
0078      DO 374 JJ = 2,86          00010890
0079      PYEAR(JJ,ISEX) = (MYEAR(JJ,ISEX)/2.0) -          00010900
          I (MYEAR(JJ,(ISEX+1))/2.0) + (MYEAR(JJ,(ISEX+6))/2.0)          00010910
          I - (MYEAR(JJ,(ISEX+8))/2.0) + (MYEAR(JJ+1,(ISEX))/2.0)          00010920
0080      374 CONTINUE          00010930
          PYEAR(87,ISEX) = (MYEAR(87,ISEX)/2.0)          00010940
          I - (MYEAR(87,(ISEX+1))/2.0) + (MYEAR(87,(ISEX+6))/2.0)          00010950
          I - (MYEAR(87,(ISEX+8))/2.0)          00010960
0082      374 CONTINUE          00010970
          C PUTTING SINGLE YEAR DATA INTO 5 YEAR CPNUS COUNT          00010980
0083      DO 72 ISEX = 1,2          00010990
0084      MAT(1,ISEX) = MYEAR(2,ISEX)          00011000
0085      MAT(2,ISEX) = MYEAR(3,ISEX) + MYEAR(4,ISEX)          00011010
          I + MYEAR(5,ISEX) + MYEAR(6,ISEX)          00011020
0086      DO 74 KK = 3,18          00011030
0087      LL = (5*KK) - 8          00011040
0088      MAT(KK,ISEX) = MYEAR(LL,ISEX) + MYEAR(LL+1,ISEX)          00011050
          I + MYEAR(LL+2,ISEX) + MYEAR(LL+3,ISEX)          00011060
          I + MYEAR(LL+4,ISEX)          00011070
0089      74 CONTINUE          00011080
          MAT(19,ISEX) = MYEAR(17,ISEX)          00011090
0091      72 CONTINUE          00011100
          C PUTTING SINGL YEAR DEM. EVENTS INTO 5 YEAR GROUPS          00011110
0092      DO 79 JSEX = 1,12          00011120
0093      MAT(1,JSEX) = MYEAR(1,JSEX)          00011130
0094      MAT(2,JSEX) = MYEAR(2,JSEX) + MYEAR(7,JSEX)          00011140

```

contd.

Figure B.1 (continued)

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FORTRAN IV G1 RELEASE 2.0          MAIN          DATE = 78233          08/52/76          PAGE 0703
      1 + MYEAR(L,JSEX) + MYFAR(B,JSEX)          00001140
0095      DD 78 MM = 3,18          00001150
0096      L = (5*MM) - 9          00001160
0097      MAT(NN,JSEX) = MYEAR(L,JSEX)          00001170
      1 + MYEAR((L+1),JSEX) + MYEAR((L+2),JSEX)          00001180
      1 + MYEAR((L+3),JSEX) + MYEAR((L+4),JSEX)          00001190
0098      78          00001200
0099      MAT(10,JSEX) = MYEAR(66,JSEX)          00001210
      1 + MYEAR(87,JSEX)          00001220
0100      79          00001230
      CONTINUE          00001240
      C PUTTING PERSON YEARS IN 5 YEAR AGE GROUPS          00001250
0101      DD 93 KSEX = 13,14          00001260
0102      KD = KSEX - 12          00001270
0103      A(1,KSEX) = PYEAR(L,KD)          00001280
0104      A(2,KSEX) = PYEAR(L,KD) + PYEAR(L+5,KD) + PYEAR(L+10,KD)          00001290
      1 + PYEAR(L+15,KD)          00001300
0105      DD 94 MM = 3,18          00001310
0106      L = (5 * MM) - 9          00001320
0107      A(MN,KSEX) = PYEAR(L,KD) + PYEAR((L+1),KD)          00001330
      1 + PYEAR((L+2),KD) + PYEAR((L+3),KD) + PYEAR((L+4),KD)          00001340
0108      94          00001350
0109      A(I,K) = PYEAR(16,KD) + PYEAR(17,KD)          00001360
0110      93          00001370
0111      00 DD 80 J=1,12          00001380
0112      00 80 I=1,19          00001390
0113      80 MAT(20,J) = MAT(20,J) + MAT(I,J)          00001400
0114      DD 96 K = 13,14          00001410
0115      DD 96 I = 1, 19          00001420
0116      A(I,K) = A(20,K) + A(I,K)          00001430
0117      96          00001440
0118      DD 60 J=1,20          00001450
0119      IF (MAT(I,J).EQ.0.OR.A(I,13).EQ.0) GO TO 360          00001460
0120      100 A(I,J) = ((MAT(I,J)+1.0)/(A(I,13)+1.0))* 100.0          00001470
0121      360          00001480
0122      88          00001490
0123      DD 80 J=1,20          00001500
0124      IF (MAT(I,J).EQ.0.OR.A(I,14).EQ.0) GO TO 60          00001510
0125      170 A(I,J) = ((MAT(I,J)+1.0)/(A(I,14)+1.0)) * 100.0          00001520
0126      60          00001530
0127      60          00001540
0128      DD 261 J=1,2          00001550
0129      DD 261 J=1,20          00001560
0130      IF (MAT(J,1).EQ.0.OR.MAT(20,1).EQ.0) GO TO 261          00001570
0131      A(J,1) = (MAT(J,1)+1.0)/MAT(20,1)+100.0          00001580
0132      261          00001590
0133      DD 800 I = 3,19          00001600
0134      I1 = I - 2          00001610
0135      IF (A(I,14).EQ.0) RB(I1) = 0          00001620
0136      IF (A(I,14)) 800,800,800          00001630
0137      801          00001640
0138      800          00001650
0139      DD 810 I = 1,17          00001660
0140      RB(10) = RB(10) + RB(I1)          00001670
0141      DB(10) = DB(10)+5          00001680
      C WRITE OUT RESULTS FOR YEAR          00001690
0142      NYEAR = IYFAR + 1457          00001700
0143      WRITE(6,201) IYFAR,NYEAR          00001710
0144      201          00001720

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FORTRAN IV G1 RELEASE 2.0          MAIN          DATE = 78233          08/52/76          PAGE 0804
      10X,'OUTMIG',6X,'GROWTH',6X,'PERSON YEARS',6X,'IMP')          00001720
      CIMP=0.0          00001730
0145      IBIRTH = MAT(20,3) + MAT(20,4)          00001735
0146      IF (IBIRTH.EQ.0) GO TO 140          00001740
0147      CIMP = ((MAT(1,8) + MAT(1,9)) + 1000.0)/IBIRTH * 1.0          00001745
0148      140          00001750
0149      CONTINUE          00001760
0150      WRITE(6,133)(MAT(I,J),J=1,14),(A(I,J),J=1,14),CIMP          00001770
0151      133          00001780
0152      WRITE(6,134)(MAT(20,3),J=1,14),(A(20,3),J=1,14)          00001790
0153      134          00001800
0154      IA = 8          00001810
0155      IB = 9          00001820
0156      DD 110 I=3,19          00001830
0157      IZ = I - 2          00001840
0158      WRITE(6,111) (A,IB,(MAT(I,J),J=1,14),(A(I,J),J=1,14),RB(IZ))          00001850
0159      111          00001860
0160      IA = IA + 8          00001870
0161      IB = IB + 8          00001880
0162      WRITE(6,122)(MAT(20,J),J=1,14),(A(20,K),K=1,14),RB(18)          00001890
0163      122          00001900
0164      RB(18) = 0.0          00001910
0165      A=M(A(20,13)+A(20,14))          00001920
0166      IF (MAT(20,2).EQ.0.OR.A(20,14).EQ.0) GO TO 202          00001930
0167      CC = (MAT(20,1)+100.0)/MAT(20,8)+1.0          00001940
0168      FE = (A(20,13)+100.0)/A(20,14)+1.0          00001950
0169      202          00001960
0170      JK=J+1          00001970
0171      JJ=J+2          00001980
0172      222          00001990
0173      AA(JJ) = ((MAT(20,J) + MAT(20,JK)) * 10.)/(IAM * 1.0)          00020000
0174      WRITE(6,123) CC,AA,FE          00020010
0175      123          00020020
0176      WRITE(6,177)(MAT(I,J),J=1,12),(I=1,20),((A(I,K),K=13,14),I=1,20)          00020030
0177      177          00020040
0178      100          00020050
0179      1010          00020060
0180      ENDFILE 4          00020070
0181      STOP          00020080
      END

```

death. The discussion is presented in terms of the one-year time and age intervals that were the calculation units used in the core computer program.

The diagonal dotted lines in the Lexis diagram indicate the aging of age-specific population cohorts over time. For example, the population of age zero to one at the beginning of the year 1970, i.e., the cohort born during 1969, becomes the population aged one to two at the beginning of year 1971, two to three at the beginning of 1972, etc.

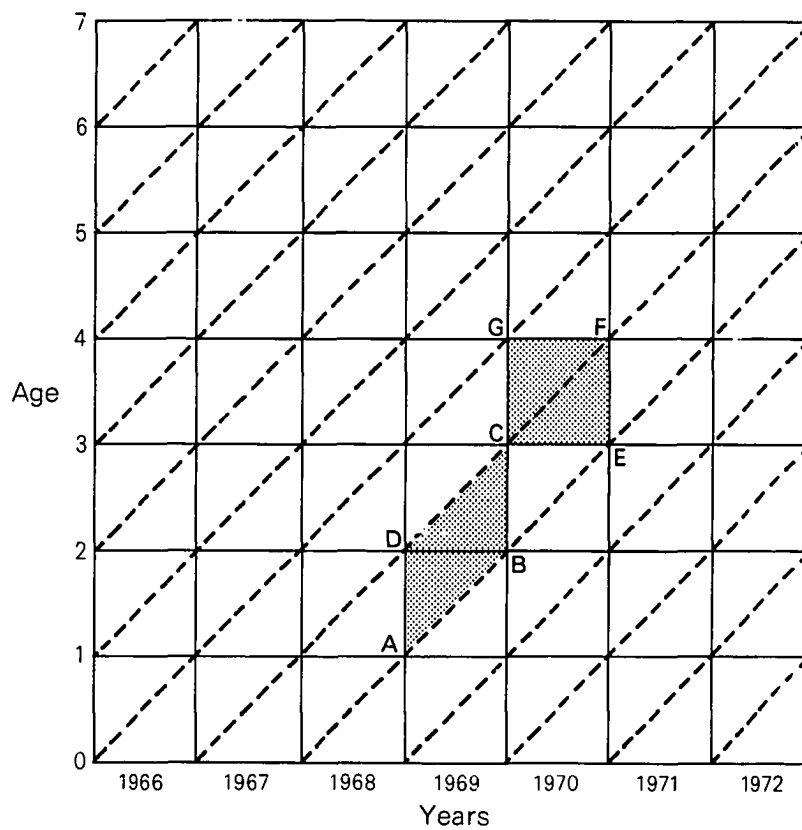
The shaded parallelogram ABCD represents the number of person-years lived by the population which was one to two years old at the beginning of the year 1969 and became two to three years old during the ensuing year. Because birth dates are assumed to occur randomly throughout the year, half of those person-years, triangle ABD, accrue to people at age one-and-a-half, and half, triangle DBC, to people at age two-and-a-half. Because demographic events, which provide the numerators for the calculation of demographic rates, are recorded by ages at last birthday it is necessary to have a denominator which cumulates person-years by such ages.

The shaded rectangle CEFG represents the total person-years lived by people at age three last birthday during the year 1970. It incorporates the person-years-lived experiences of two distinct cohorts. Triangle CEF depicts the number of person-years lived by members of the 1967 birth cohort at age three during the year 1970. Triangle CFG depicts the number of person-years lived by the 1966 birth cohort at age three during the same year 1970. An equation which cumulates the experiences of adjacent cohorts into measures of person-years for given age y for a specific year x may be written as follows:

$$PYL_y^x = \frac{1}{2}P_y^x + \frac{1}{2}P_{y-1}^x$$

where PYL = person-years lived
 P = population
 x = year
 y = age

Figure B.2. Lexis Diagram



and therefore

$$\begin{aligned} \text{PYL}_y^x &= \text{person-years lived by people aged } y \text{ during year } x \\ P_y^x &= \text{population aged } y \text{ at start of year } x \\ P_{y-1}^x &= \text{population aged } y-1 \text{ at start of year } x. \end{aligned}$$

To calculate person-years for actual populations, that is, populations which are not closed to migration or death, the equation must be expanded to include some measure of person-years lived by people who enter or leave the population during the one-year time interval. Except for the first year of life, for which slightly different assumptions were needed to cover the relatively more frequent occurrence due to infant mortality of individuals entering and leaving the population during the first year of life, it was assumed that all events of entry into (in-migration) and exit from (out-migration and death) the population were evenly distributed throughout each year. Thus the median point of occurrence would be at the mid-year. Consequently, one-half a person-year is added to the total for each event of in-migration recorded and one-half a person-year is subtracted for each event of out-migration or death recorded by exact age for specific time periods. The above equation can now be completed in the form:

$$\text{PYL}_y^x = \frac{1}{2}(P_{y-1}^x + P_y^x + I_y^x + I_{y-1}^x - O_y^x - O_{y-1}^x - D_y^x - D_{y-1}^x)$$

where I = in-migrants
 O = out-migrants
 D = deaths.

Close examination of the four years of program output presented in Figure B.3 reveals that the genealogically-based population counts are consistent from one year to the next. The increments of birth and in-migration and the decrements of death and out-migration differentiate population totals from one year to the next. This is in accordance with most basic population equation, the equation of population change:

$$P_1 = P_0 + B - D + I - O$$

-
2. For the first year of life the equation was slightly modified to take account of the higher likelihood that both entry into and exit from the population may occur in the same year.

This equation was not itself incorporated into the logic of the core computer program reproduced in Figure B.1. Rather the program operated by making distinct year-by-year counts of all persons present at the beginning of each year and events occurring during the course of each year in the study community. The yearly counts were made without reference to previous counts or demographic occurrences. Consistency from year to year in accordance with the equation of population change served as the means for verifying program accuracy. Program debugging and modification continued as long as population counts in successive time periods remained inconsistent, which they did for several trying months.

For each year the core program computed several basic demographic measures. In addition to the age-sex distribution and cumulative sex ratio (printed in the first two columns of program output reproduced in Figure B.3), crude rates of birth, death, in-migration, out-migration, and population growth (printed along the bottom row of program output) were computed. These rates, like the entire range of age and sex specific rates also computed (printed in their appropriate positions throughout the output matrix) used the appropriate measures of person-years-lived (printed in the last two columns of the matrix) as the denominator. Results of the single year computations for the crude rates of birth, death, and in and out-migration are summarized in Table B.1.

In Table B.2 events cumulated over broader periods than the single year counts of the core program are presented within the context of the equation of population change. The resulting population totals are consistent at all points in time with yearly totals generated by the core program. Adding up person-year totals for these same time periods provided denominators for computing average crude rates of birth, death, and migration over different time intervals. The results of these computations are presented in Table B.3.

For some purposes it was desirable to have rates computed for every single year rather than have single rates computed for several year periods. In such cases moving averages were used. These are especially useful for overcoming short-term fluctuations that may have resulted from temporal heaping.

Table B.1. Crude Demographic Rates* for Every 10th Year of Genealogical Censusing

Christian Era	Total Population at start of year	Crude Birth Rate	Crude Death Rate	Crude In-Migration	Crude Out-Migration	Buddhist Era
1851	3	.400	.000	.400	.000	2394
1861	9	.200	.000	.000	.000	2404
1871	19	.051	.000	.000	.000	2414
1881	57	.016	.016	.105	.000	2424
1891	157	.081	.000	.110	.000	2434
1901	400	.036	.010	.078	.002	2444
1911	664	.042	.008	.025	.000	2454
1921	987	.035	.013	.011	.006	2464
1931	1304	.036	.014	.011	.015	2474
1941	1579	.034	.017	.015	.025	2484
1951	1807	.032	.021	.009	.027	2494
1961	2072	.039	.021	.007	.052	2504
1971	2010	.025	.011	.018	.045	2514

* All rates are computed on the basis of person-year denominators.

Table B.2. Equation of Population Change applied to Genealogical Census Data

Christian Era	P_0	+	B	-	D	+	I	-	O	=	P_1	Buddhist Era
Fifty years												
1846-1895	2		158		5		133		1		287	2389-2438
1896-1945	287		1708		532		531		314		1680	2439-2488
Twenty-five years												
1846-1870	2		13		0		4		0		19	2389-2413
1817-1895	19		145		5		129		1		287	2414-2438
1896-1920	287		590		120		268		38		987	2439-2463
1921-1945	987		1118		412		263		276		1680	2464-2488
1946-1970	1680		1728		661		389		1126		2010	2489-2513
Twenty years												
1851-1870	3		12		0		4		0		19	2394-2413
1871-1890	19		70		3		72		1		157	2414-2433
1891-1910	157		354		47		211		11		664	2434-2453
1911-1930	664		716		194		217		99		1304	2454-2473
1931-1950	1304		1009		439		240		307		1807	2474-2493
1951-1970	1807		1432		515		309		1023		2010	2494-2513
Ten years												
1911-1920	664		311		75		114		27		987	2454-2463
1921-1930	987		405		119		103		72		1304	2464-2473
1931-1940	1304		481		194		109		121		1579	2474-2483
1941-1950	1579		528		245		131		186		1807	2484-2493
1951-1960	1807		724		269		163		353		2072	2494-2503
1961-1970	2072		708		246		146		670		2010	2504-2513
Five years												
1931-1935	1304		231		77		49		41		1466	2474-2478
1936-1940	1466		250		117		60		80		1579	2479-2483
1941-1945	1579		232		99		51		83		1680	2484-2488
1946-1950	1680		296		146		80		103		1807	2489-2493
1951-1955	1807		337		129		75		135		1955	2494-2498
1956-1960	1955		387		140		88		218		2072	2499-2503
1961-1965	2072		382		129		81		314		2092	2504-2508
1966-1970	2092		326		117		65		356		2010	2509-2513
1971-1975	2010		174		91		101		476		1718	2514-2518

Table B.3. Averaged Crude Demographic Rates (per 1000 Person-
Years) from Genealogical Census Data

Christian Era	Birth	Death	In-Migration	Out-Migration	Buddhist Era
Fifty years					
1846-1895	59.3	1.9	49.9	0.4	2389-2438
1896-1945	34.7	10.8	10.8	6.4	2439-2488
Twenty-five years					
1846-1870	56.4	-	17.4	-	2389-2413
1817-1895	59.6	2.1	53.0	0.4	2414-2438
1896-1920	38.7	7.9	17.6	2.5	2439-2463
1921-1945	32.9	12.1	7.7	8.1	2464-2488
1946-1970	35.7	13.7	8.0	23.3	2489-2513
Twenty years					
1851-1870	55.6	-	18.5	-	2394-2413
1871-1890	52.9	2.3	54.4	0.8	2414-2433
1891-1910	43.3	5.8	25.8	1.3	2434-2453
1911-1930	36.6	9.9	11.1	5.1	2454-2473
1931-1950	32.4	14.1	7.7	9.9	2474-2493
1951-1970	36.0	12.9	7.8	25.7	2494-2513
Ten years					
1911-1920	38.0	9.2	13.9	3.3	2454-2463
1921-1930	35.6	10.5	9.1	6.3	2464-2473
1931-1940	33.3	13.4	7.5	8.4	2474-2483
1941-1950	31.6	14.7	7.8	11.1	2484-2493
1951-1960	37.6	14.0	8.5	18.3	2494-2503
1961-1970	34.5	12.0	7.1	32.6	2504-2513
Five years					
1931-1935	33.5	11.2	7.1	5.9	2474-2478
1936-1940	33.1	15.5	7.9	10.6	2479-2483
1941-1945	28.6	12.2	6.3	10.2	2484-2488
1946-1950	34.5	17.0	9.3	12.0	2489-2493
1951-1955	36.2	13.8	8.0	14.5	2494-2498
1956-1960	38.8	14.1	8.8	21.9	2499-2503
1961-1965	37.1	12.5	7.9	30.5	2504-2508
1966-1970	31.8	11.4	6.3	34.8	2509-2513
1971-1975	18.5	9.7	10.7	50.6	2514-2518

APPENDIX C

THE CHINESE PRESENCE IN BAAN TANG CHANG

The Chinese did not suddenly burst upon Thailand in the late nineteenth century. Rather there is evidence that Chinese were "present at the very beginning of the history of Thailand as a nation" (Amyot, 1972: 76). In the thirteenth century, Chinese were already present as merchants in several market towns, as tin miners on the Malay peninsula, and even as a group of potters at Sukothai (Amyot, 1972: 76). As far back as the early seventeenth century, Chinese merchants dominated many of the larger market towns in Thailand (Credner, 1935: 193, 361). They had a flourishing district within the old city walls of Ayutthaya even prior to its fall to the Burmese in 1766 (Tobias, 1971: 63). The subsequent regrouping of the defeated Thais, routing of the Burmese from Ayutthaya, and re-establishment of the Thai capital at Bangkok some 50 kilometres to the south of Ayutthaya in 1767 was accomplished under the leadership of Phraya Tak, or Taksin as he is often called. Taksin was himself part-Chinese, born of a Teochiu Chinese father and a Thai mother (Skinner, 1957: 20). His rule, which lasted until his overthrow in 1782, is held to have given the Teochiu Chinese "a favoured start in the modern 'Bangkok era'" (Skinner, 1957: 45).

The tide of Chinese immigration to Thailand began to rise in the early nineteenth century. As early as the reign of Rama III (1824-1851), the growing numbers of Chinese immigrants were felt to be undermining the traditional corvee labour system (Rabibhadana, 1975: 114). Skinner estimates that the total number of Chinese-born residents in Thailand increased steadily from 100,000 in 1825 to 166,000 in 1890. Within 20 years it had doubled to 325,000 in 1910 (1957: 79). Over the next 20 years, the Chinese-born population had doubled again to 728,000 in 1932 (1957: 182).¹ A

-
1. These figures are based on estimates of net migration figures (arrivals over departures) that Skinner calculated for the nineteenth and early twentieth centuries. From an annual immigration surplus of 3,000 Chinese in the 1820s there was a gradual increase to around 7,000 per year by 1870 (1957: 59). More reliable data after that time indicates that an average annual immigration surplus of 7,100 Chinese continued until 1893 at which time it more than doubled. From 1893 to 1917, though yearly fluctuations occurred in the numbers of arriving and departing Chinese, the annual surplus averaged over two periods was a consistent 15,000 Chinese immigrants per year (Skinner, 1957: 61). From 1918 to 1931 the average annual surplus of arrivals over departures was almost 36,000 (Skinner, 1957: 172).

sudden jump in the volume of Chinese arrivals occurred during the year 1893-94 and was sustained for several decades thereafter. Skinner attributes this jump to a coincidence of several factors: a crop failure in the southern China homelands of the immigrants, a repeal of an eighteenth century Chinese edict which prohibited emigration and return, and the high demand for Chinese labourers for constructing the Bangkok-Ayutthaya railroad in the Central Plains which was begun in 1892 (1957: 64). This last factor initiated a new wave of Chinese settlement in the major market towns of the Central Plains which was ultimately to have far-reaching effects upon the Thai villagers who lived across the river basin countryside.

The eldest Tang Chang villagers recalled that they were still children when they first saw Chinese passing through their village. They remembered the strange sight of these peculiarly-speaking men dressed in black, loose-fitting garb with long queues of hair trailing down their backs. They came to Tang Chang in the hope of hiring themselves out for digging fish ponds or some other manual task, for which the villagers would pay them in rice.

In time, many of these once-destitute Chinese or their descendants were able to transform themselves from the improverished labourers they were in the first years after arrival to a position of economic hegemony over many of the Thai farmers for whom they were once eager to work. In a brief parable of Chinese shrewdness and industry, a former Tang Chang villager, himself of Chinese ancestry, related an encapsulated history of the Chinese experience in village Thailand:

When the Chinese first came they begged for work in the rice fields of the Thai. In the present day not only are many of these same fields now owned by the Chinese and rented to the Thai, but in the slack season while the fields lie fallow some of these same Chinese try to gain even more (from the Thai). With hired boys to herd large flocks of ducks and geese daily through the rice fields, they fatten their flocks, and subsequently their own pockets, even on the rice grains which the Thai farmers have inadvertently left lying on the ground.

As the two following case studies illustrate, for some Chinese immigrants residence in Baan Tang Chang was a stepping stone on the way to greater success, for others it was a final destination after previous failures.

Miang was born just after the turn of the century in Southern China. As a young man, he decided to leave his home village for the great money-making opportunities that were said to exist in Thailand. Fully intending to

return a rich man within a few years, he had no qualms about leaving a wife and son behind. Though at a later time both his younger brother and his son joined him in Thailand, his wife forever remained behind. The steamship on which he traveled, crammed in deck passage along with many other young men much like himself, took a week to reach Bangkok. After a period of wage labour employment, he quit for the odd jobs he was able to do for Chinese merchants who had already established themselves in up-country market towns. He met and took as his wife the daughter of one of these market-town Chinese.

Looking to establish his own business, he explored the hinterland rice-growing areas of the Central Plains. Finding a village sufficiently distant from any market and having no small shop of its own, 51 years ago he moved with his wife to the community of Tang Chang. Over the next 18 years his wife bore him eleven children, eight of whom survived to adulthood. Within a short time, seeing the moderate success he was beginning to enjoy as a small trader and shopkeeper, several of his wife's brothers and sisters moved to join them.

Miang was, however, still not satisfied with the small economic success he was enjoying in Baan Tang Chang. By his early thirties he was venturing off for long stays in Bangkok, leaving his growing family behind in Tang Chang. He took whatever jobs came his way, working in a variety of capacities both for others and for himself. Finally, as he approached his fortieth birthday he began to be successful as a cloth merchant. Over the next several years as each of his children, save for his eldest daughter who had already married and settled elsewhere in the village, grew old enough to be of help in the business and to benefit from the education they could acquire in Bangkok, they were sent to join him. Finally, only 15 years ago his wife closed up the empty village homestead in Tang Chang and also moved to Bangkok.

Fourteen years ago Miang died and was buried in traditional Chinese fashion with several hundred relatives and friends in attendance. He lived long enough to see his Bangkok cloth business become a thriving family enterprise, which it continues to be to this day. He also took great pride in his oldest son who was a medical school graduate and in his youngest son who was studying on scholarship in England at the time of Miang's death.

Miang's success story - well-known to all Tang Chang villagers - may be contrasted with the quite different experience of another Chinese immigrant.

Tia was born almost one hundred years ago in the same southern Chinese province as Miang. Though he had come to Thailand some 20 years before Miang, for a time after arrival there his life followed a similar course. He settled into an up-country market town, met and married a Thai-born Chinese woman, and had children. However, whatever chance he had at becoming a successful merchant went up in the opium smoke to which he was soon addicted. He fell in with a group of addicts and languished in that life until his mid-fifties. At that time his wife was finally able to convince him to leave the bad influence of his friends and try a new start in a backcountry village. In the 1930s he was able to purchase a small amount of land in Baan Tang Chang and moved there to take up the hard work of farming rice. For the next 30 years as his children grew to maturity and married others in the village he continued to work his fields. At 95 years old, along with his wife, he lives there still, in a small house next to his son. His hearing is failing and his Thai is still strongly-accented with Chinese inflections, but as he tells his life story he shows no regret and not a little measure of pride. Though the small one-room shack in which he lives reflects his lack of notable economic achievement, in the improved circumstances of his children's lives his hopes for the future lie.

Though attracted originally to the relatively well-paying jobs as railroad coolies or construction workers, it was not long before Chinese immigrants had established themselves in market-places throughout the Central Plains. As the influx continued and opportunities became more scarce, the predominantly male immigrants began to take trade goods directly to the villagers. Some of them like Miang sought to establish small stores in villages; others like Tia decided to take advantage of the relative abundance of cheap land and return to the farming life they were more than likely to have known before their departure from China. In this way over the years a number of Chinese men, most of them with Thai or Thai-Chinese wives, came to settle in villages like Bang Tang Chang. Of the 298 Tang Chang households for whom the information was collected, 75 or 25.2 percent can be traced as having some Chinese ancestry.

As several scholars (e.g. Skinner, 1957; Amyot, 1972) have noted, the most remarkable aspect of Chinese migration to Thailand has not so much been its volume or its occupational specificity, but rather the apparent degree to which Chinese migrants and their descendants have been assimilated into Thai culture. Several aspects of indigenous Thai culture - the language,

Theravada Buddhism, as well as Thai surnames - were all taken up by Chinese immigrants with an alacrity and ease nowhere else evident in Southeast Asia. One need only point to the fractious racial situation which continues to exist between Chinese and Malays in Thailand's closest southern neighbour to find an example more typical of the Chinese experience in Southeast Asia. Nevertheless, despite the superficial appearance that assimilation was almost totally complete, there still remain significant differences between those villagers with Chinese ancestry and those without.

Most villagers could readily point out who among their neighbours were partly or wholly Chinese. While on the one hand, Thai villagers often refer to Chinese-Thai neighbours by the derogatory term cek, on the other they generally admire Thai-Chinese offspring, luuk ciin (literally meaning "Chinese children", colloquially meaning offspring of Chinese fathers and Thai or partially-Thai mothers) as being more clever (chalaat) and energetic (khayaan) than purely Thai children. Though a few of the oldest luuk ciin, along with the one surviving China-born villager, Tia, can speak a Chinese dialect, none write the language, and none of the younger second and third generation descendants know more than a few Chinese words. In general, there are only two outward signs by which Thai-Chinese families demonstrated their mixed heritage: the first was by using the Chinese word for father (tia) rather than the Thai work (po), which was true even of some of the youngest third generation offspring; the second was by the presence in their houses of a Chinese altar usually associated with a traditional ancestral cult. In other ways including physical appearance, demeanor, dress, and speech, the villagers of Chinese descent were practically indistinguishable from their Thai neighbours.

If there are any ethnically-based differences with implications for village demographic behaviour they would most probably be evident within family relationship differentials. While I have already described Thai family structure as non-extensive and structured largely upon personally-based dyadic bonds of reciprocity between kin-related members, Skinner has linked Chinese immigrant economic success in Thailand with the extended family they brought with them from southern China:

The Chinese peasant has a definite place in a temporal continuum of kin. Within the extended kin groups -- dead, living, and yet to be born -- he looked to the past as well as to the future: he was not only grateful to his ancestors for what his immediate family had, but was

responsible to them for what he did to further the fortune of his family lineage. His world view was, therefore, historical and kin-centered, and in this context his industriousness and thrift served ends transcending his individual life. His primary goal was not individual salvation, but lineage survival and advancement.

(Skinner, 1957: 92-93).

To a limited extent some characteristics of the extended family structure still survive among Tang Chang villagers of Chinese descent. As one indication, relatives who have moved apart over the years appear to maintain better contact and to more frequently visit each other among the Thai-Chinese than the purely Thai villagers. Additionally, if negative expressions of feelings towards each other may be taken as evidence of greater involvement with and commitment to each other, the Thai-Chinese families appeared to be clearly more engaged in maintaining the bonds of extended family relationships than were the Thais. Long-term feuds, short-term arguments, and occasional blows struck in anger between kindred were a backdrop to Thai-Chinese family relations in the village. In contrast, in Thai families, the management of kin relationships appeared more contented and complacent, or alternatively in a state of total disrepair if contentment and complacency could not be maintained. Again when cooperative and reciprocal labour exchanges most regularly occurred, it appeared to be Chinese-Thai kindred who were most likely to be involved. To provide one brief example, the only tractor in Tang Chang to be reported as jointly owned was the property of two Chinese-Thai brothers-in-law.

Some insight may be derived from looking at demographic differentials between the southern China homelands during the period of out-migration and the Central Thailand region which was the destination for many of these Chinese migrants. Kwang Tung province from which many of the migrants originated was reported in 1905 as being "nearly everywhere under cultivation" (Richard, 1905: 206 cited in Bannister, 1978: 340). In contrast, the Central Plains of Thailand were only sparsely populated at that time and have only reached relatively high density levels within the most recent decade.

In questioning Thai-Chinese villagers it was found to be widely believed that marriages occurred at significantly younger ages in the land of their forefathers than in the country to which they migrated. Two elderly Thai-Chinese men, one still living in Tang Chang, the other a former resident, reported drawing similar conclusions from trips they had made in their youth to their fathers' homeland villages. In separate interviews they

remarked that it was the young age at which women married that was the most striking difference between the southern China villages they visited and the Thai villages in which they had been raised. Each specifically attributed the higher population densities evident in China to the large family sizes that were the consequent result of early marriage. The validity of their observations is confirmed by recent re-analysis of a 1929-31 survey of rural China which gives the singulate mean age of marriage for South China as 17.78 (Barclay *et al.*, 1976: 609). Comparable data from Baan Tang Chang shows the mean age of marriage for surviving women in the 70 years and over cohort was 23.7.

While age at marriage differences in time past may be attributed to the greater importance of the extended family and the consequently greater corporate interest in maximizing lineage fertility in Southern China, it is not clear that similar differentials continued to characterize Chinese migrants and their descendants once they began to assimilate the norms of Thai culture. Though field study observation provided evidence that second and third generation Thai-Chinese villagers are still distinguishable from purely Thai villagers, preliminary analysis of data collected during field study did not support the hypothesis that the differences remaining in the present time translate into significant demographic differentials between these groups. However, there is some evidence that fertility levels of a generation ago were marked by temporary differences produced by differential response to the economic hardships of the Depression and War years.

An ethnicity factor which distinguishes villagers who are purely Thai from those who have some Chinese ancestry was used to separate genealogical records. As the general fertility rates presented in Table C.1 show, a significant fertility difference between the two groups occurred precisely during the 1941-1945 period. How Chinese Thai villagers were able to exercise control over their fertility in this period is a point for further discussion.

While abortion, coitus interruptus or abstinence could have been used to control fertility, delay of marriage also seems a likely means. The Chinese-Thai villagers, more so three decades ago than presently, were different from Thai villagers in two relevant ways: 1) they demonstrated greater financial acumen; 2) they exercised stricter control over their children, especially with regard to marriage. Though the small numbers involved means that the evidence is not conclusive, in Table C.2 age of first

Table C.1. General Fertility Rates by Ethnicity from Genealogical Census Data

Years (A.D.)	Chinese-Thai Villagers			Thai Villagers			Years (B.E.)
	Women 15-45 Person-Years	Births	GFR	Women 15-45 Person-Years	Births	GFR	
1931-1935	254	43	169.6	786	136	173.1	2474-2478
1936-1940	261	38	145.6	935	155	165.9	2479-2483
1941-1945	275	31	112.9	1063	154	144.9	2484-2488
1946-1950	336	52	154.8	1197	183	152.9	2489-2493
1951-1955	391	59	151.1	1366	219	160.3	2494-2498
1956-1960	399	82	205.8	1432	257	179.5	2499-2503
1961-1965	425	96	225.9	1416	241	170.2	2504-2508
1966-1970	452	78	172.6	1379	226	163.9	2509-2513
1971-1975	445	41	92.2	1330	124	93.4	2514-2518

Table C.2. Age of Mothers at First Birth by Ethnicity from Genealogical Census Data

Years (A.D.)	Chinese-Thai Villagers		Thai Villagers		Years (B.E.)
	No. of First-Born Children	Average Age of Mother	No. of First-Born Children	Average Age of Mother	
1931-1935	15	22.7	26	23.4	2474-2478
1936-1940	7	22.7	29	24.4	2479-2483
1941-1945	7	27.7	34	24.0	2484-2488
1946-1950	12	24.3	46	24.9	2489-2493
1951-1955	15	22.6	48	25.4	2494-2498
1956-1960	23	23.9	50	23.5	2499-2503
1961-1965	11	24.6	34	23.0	2504-2508
1966-1970	8	22.8	31	25.1	2509-2513
1971-1975	4	24.8	23	24.5	2514-2518

birth data for these two groups supports the contention that the Chinese-Thai villagers delayed marriage during this critical period.

The requirement of brideprice payment, equally respected by all villagers, provides a means for making a direct transference from economic conditions to entry into marriage. The result for Thai-Chinese villagers was that marriage was delayed during the economic difficulties of World War II. For Thai villagers, as shown in Table C.2, no such change occurred. Greater indulgence of their children and more flexibility about brideprice levels were the probable means through which marriage postponement was avoided. Whether other cultural differences between Chinese-Thai and purely Thai villagers similarly were manifested in patterns of differential demographic behaviour is a subject in need of further study.

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